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A CATALOG OF THE COLEOPTERA OF AMERICA NORTH OF MEXICO

FAMILY: SCARABAEIDAE

SUBFAMILIES: RUTELINAE and DYNASTINAE

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FAMILIES OF COLEOPTERA IN AMERICA NORTH OF MEXICO

<i>Fascicle¹ Family</i>	<i>Year issued</i>	<i>Fascicle¹ Family</i>	<i>Year issued</i>	<i>Fascicle¹ Family</i>	<i>Year issued</i>
1 Cupedidae	1979	46 Callirhipidae		102 Biphyllidae	
2 Micromalthidae	1982	47 Heteroceridae	1978	103 Byturidae	1991
3 Carabidae		48 Limnichidae	1986	104 Mycetophagidae	
4 Rhysodidae	1985	49 Dryopidae	1983	105 Ciidae	1982
5 Amphizoidae	1984	50 Elmidae	1983	107 Prostomidae	
6 Haliplidae		51 Buprestidae		109 Colydiidae	
8 Noteridae		52 Cebrionidae		110 Monomatidae	
9 Dytiscidae		53 Elateridae		111 Cephaloidea	
10 Gyrinidae		54 Throscidae		112 Zopheridae	
13 Sphaeritidae		55 Cerophytidae		115 Tenebrionidae	
14 Hydroscaphidae		56 Perotropidae		116 Alleculidae	
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17 Georyssidae		61 Phengodidae		119 Mycteridae	
18 Sphaeritidae		62 Lampyridae		120 Pyrochroidae	1983
20 Histeridae		63 Cantharidae		121 Othniidae	
21 Ptiliidae		64 Lycidae		122 Inopeplidae	
22 Limulodidae		65 Derodontidae	1989	123 Oedemeridae	
23 Dasyceridae		66 Nosodendridae		124 Melandryidae	
24 Micropeplidae	1984	67 Dermestidae		125 Mordellidae	1986
25 Leptinidae		69 Ptinidae		126 Rhipiphoridae	
26 Leioididae		70 Anobiidae	1982	127 Meloidae	
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29 Scaphidiidae		74 Trogositidae		130 Euglenidae	
30 Staphylinidae		76 Cleridae		131 Cerambycidae	
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34 Scarabaeidae	1984	82 Nitidulidae		135 Anthribidae	
35 Eucinetidae		83 Rhizophagidae		138 Allocorynidae	1991
36 Helodidae		86 Cucujidae		140 Brentidae	
37 Clambidae		90 Cryptophagidae		141 Platypodidae	1979
38 Dascillidae		92 Languriidae	1983	142 Scolytidae	
39 Rhipiceridae		93 Erotylidae		143 Curculionidae	1983
40 Byrrhidae		94 Phalacridae		144 Stylopidae	
41 Psephenidae	1983	95 Cerylonidae	1982	145 Fossil Coleoptera	
42 Brachypsectridae		96 Corylophidae		146 Ithyceridae	
43 Artematopidae		97 Coccinellidae			
44 Ptilodactylidae		98 Endomychidae	1986		
45 Chelonariidae		100 Lathridiidae			

¹Missing numbers are those assigned in the computer program to families not found in the United States and Canada.

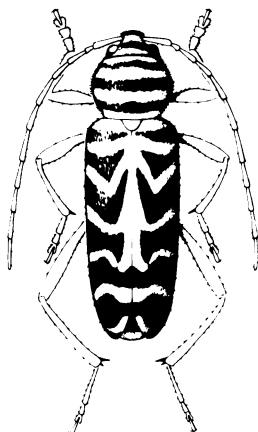
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A CATALOG OF THE COLEOPTERA OF AMERICA NORTH OF MEXICO

FAMILY: SCARABAEIDAE

SUBFAMILIES: RUTELINAE and DYNASTINAE

By
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FOREWORD

Many species of beetles are important pests of agricultural crops, stored food products, forests, wood products and structures, and fabrics. Many other species, in contrast, are beneficial in the biological suppression of pest arthropods and weeds, as well as in the decomposition of plant detritus, animal carcasses, and dung. Part of our national responsibility to American agriculture is to provide correct identification of species of American beetles so that appropriate controls can be applied.

Most information about animal species, whether agricultural, biological, or experimental, is filed under the species' scientific names. These names are therefore the keys to retrieval of such information. Because some species have been known by several names, a complete listing of these names for each species is necessary.

For the user of scientific names, an up-to-date taxonomic catalog providing currently accepted names and pertinent bibliographic and distributional data is an indispensable tool. Although taxonomic literature is constantly changing to reflect current work, the traditional published taxonomic catalog remains static with updating left to the individual user until it is revised. Production of catalogs in the past has been laborious with long printing delays resulting in data that are obsolete before being published. However, the computer now provides the capability of storing, updating, and retrieving taxonomic data; rapid publication through computer-driven typesetting machinery; and a greater degree of currentness and flexibility.

All the fascicles in this catalog of the beetles of America north of Mexico are produced by an original group of computer programs, designed and written during a pilot project by personnel of the Systematic Entomology Laboratory and the Communication and Data Services Division, Agricultural Research Service.



R. D. Plowman
Administrator
Agricultural Research Service

PREFACE

The Coleoptera, or beetles, are represented in the world by about 220,000 described species, of which about 24,000 occur in the United States and Canada. A comprehensive taxonomic catalog of beetles for this area has not been available except the series of world-based "Coleopterorum Catalogus" volumes (1909-present, Junk, Berlin). The Leng "Catalogue of the Coleoptera of America North of Mexico" (J.D. Sherman, Jr., Mt. Vernon, NY), which was published in 1920 with supplements to the end of 1947, is a checklist. However, it has served professional and amateur alike for nearly 60 years as the principal source of scientific names of beetles. Since 1947, many new taxa have been described and many changes in status and nomenclature have appeared in numerous scattered publications, but little effort has been made to summarize these changes.

This catalog will supplant the Leng catalog and supply additional essential information. It is produced by an original suite of storage, retrieval, and printing programs written especially for automated taxonomic catalogs.

The catalog for each family is published as a separate fascicle with its introductory text, bibliography, and sequence. The publishing of separate fascicles makes data available shortly after they are assembled. Computer tapes for each fascicle are maintained for updating and necessary reprinting.

The information on each family is the responsibility of the respective author or authors. The editors modify it only to correct obvious errors and to make it conform to the requirements of the computer programs.

No original proposal for a new name, taxon, status, or classification is given, such data having been previously published, but new host and distributional data are often listed. The rules of "The International Code of Zoological Nomenclature" are followed.

The geographic scope of this catalog includes the continental United States, Canada, Greenland, and the associated continental islands. Names of taxa found only in other regions are excluded. If the range of a species extends outside these geographic limits, this fact is indicated. On (or inside of) the back cover is a map of the 12 faunal regions based on historical and faunal criteria to simplify distribution recordings. Two-letter Postal Service style abbreviations are used for States and Provinces, and faunal regions are indicated in each distribution record by a diagonal line between groups of abbreviations.

It is not the purpose of this catalog to present a complete scheme of higher classification within the order. The familial makeup is somewhat intermediate between that of R.H. Arnett in "The Beetles of the United States" (1960-62, Catholic University Press, Washington, DC) and that of R.A. Crowson in "The Natural Classification of the Families of Coleoptera" (1967, Biddles Ltd., Guildford, England). Modifications of these two systems are largely those advocated by J.F. Lawrence based in part on suggestions by taxonomic specialists for certain families.

Generic groups and higher categories within the family are arranged phylogenetically as indicated by the author of the particular fascicle, and species group names with their respective synonyms are arranged alphabetically.

Names referable to incertae sedis and nomen dubium are listed separately at the end of the nearest applicable taxon with notations as to their status.

Each available name is followed by its author, date proposed, and page number referring to the complete bibliographic citation containing the original description. Following each generic name are the type-species and method of its designation, necessary explanatory notes, and pertinent references on immature stages, taxonomy, redescription, ecology, and keys. After the specific name entry are the original genus (if different from the

present placement), type-locality, geographical distribution by State, Province, and broad extralimital units, explanatory notes, pertinent references to immature stages, taxonomy, redescription, and ecology, depository of type-specimen and its sex, and hosts.

In addition to the list under the map (on or inside of the back cover) of faunal regions, the following abbreviations are used in this catalog:

ABBREVIATIONS, GENERAL

Amer. Bor.—America Borealis	Mus.—Museum
Amer. Sept.—America Septentrionalis	N. Amer.—North America
Autom.—Automatic	Orig. des.—Original designation
C. Amer.—Central America	Preocc.—Preoccupied
Co.—County	S. Amer.—South America
Cosmop.—Cosmopolitan	Sp.—Species
Design.—Designated	Supseq. monot.—Subsequent monotypy
F.—Female	Subsp.—Subspecies
Holarc.—Holarctic	Taut.—Tautonymy
Isl.—Island	Univ.—University
M.—Male	USA—United States of America
Mex.—Mexico	Var.—Variety
Monot.—Monotypy	W. Ind.—West Indies

MUSEUMS IN THE UNITED STATES AND CANADA

AMNH—American Museum of Natural History, New York
ANSP—Academy of Natural Sciences, Philadelphia, PA
BPBM—Bernice P. Bishop Museum, Honolulu
BYUC—Brigham Young University, Provo, UT
CASC—California Academy of Sciences, San Francisco
CISC—University of California, Berkeley
CNCI—Canadian National Collections, Ottawa
CUIC—Cornell University, Ithaca, NY
CWOB—C. W. O'Brien Collection, Tallahassee, FL
DHKC—D. H. Kistner Collection, Chico State College, CA
ELSC—E. L. Sleeper Collection, Long Beach, CA
FMNH—Field Museum of Natural History, Chicago, IL

FSCA—Florida State Collection, Gainesville
HAHC—H. & A. Howden Collection, Ottawa, Canada
ICCM—Carnegie Museum, Pittsburgh, PA
INHS—Illinois Natural History Survey, Urbana
JGEC—J. G. Edwards Collection, San Jose, CA
KMFC—K. M. Fender Collection, McMinnville, OR
KSUC—Kansas State University, Manhattan
LACM—Los Angeles County Museum, CA
LSUC—Louisiana State University, Baton Rouge
MCZC—Museum of Comparative Zoology, Harvard University, Cambridge, MA
MSUC—Michigan State University, East Lansing
NCSM—North Carolina State University, Raleigh
NYSM—New York State Museum, Albany
OSEC—Oklahoma State University, Stillwater
OSUC—Ohio State University, Columbus
OSUO—Oregon State University, Corvallis

¹Abbreviations for U. S. and Canadian museums abridged from Arnett, R. H., Jr., and Samuelson, G. A., 1969, "Directory of Coleoptera Collections of North America (Canada Through Panama)," Cushing-Malloy, Ann Arbor, MI, 123 pp.

PMNH—Peabody Museum, Yale University, New Haven, CT
PSUC—Pennsylvania State Museum, University Park
PURC—Purdue University, West Lafayette, IN
RUIC—Rutgers University, New Brunswick, NJ
SEMC—Snow Museum, University of Kansas, Lawrence
SJSC—San Jose State College, CA
SLWC—S. L. Wood Collection, Provo, UT

SMSH—Stovall Collection, University of Oklahoma, Norman
TAMU—Texas A. & M. University, College Station
UCDC—University of California, Davis
UICM—University of Idaho, Moscow
UMMZ—University of Michigan, Ann Arbor
UMRM—University of Missouri, Columbia
USNM—U.S. National Museum of Natural History, Washington, DC
WSUC—Washington State University, Pullman

MUSEUMS IN FOREIGN COUNTRIES

BMNH—British Museum (Natural History), London
GUHC—Glasgow University, Hunterian College, Scotland
HMOX—Hope Museum, Oxford, England
IPZE—Institut Pflanzenschutzforschung Zweigstelle, Eberswalde, East Germany
IRSB—Institut Royal Sciences Belge, Brussels
MFNB—Museum für Naturkunde (Humboldt), Berlin
MGFT—Museum G. Frey, Tutzing, Munich, West Germany
MHNL—Museum d'Histoire Naturelle, Lyon, France
MNHP—Museum National d'Histoire Naturelle, Paris
MNSL—Museum of Natural Sciences, Leipzig, East Germany
MZBS—Museum Zoologia, Barcelona, Spain
NHRS—Naturhistoriske Riksmuseet, Stockholm

NMPC—Narodni Museum, Prague, Czechoslovakia
SCUT—Spinola College, University of Turin, Italy
SMTD—Staatliches Museum fur Tierkunde, Dresden, East Germany
UNAM—Universidad Nacional Autonoma, Mexico City
UZMC—University Zoological Museum, Copenhagen, Denmark
UZMH—University Zoological Museum, Helsinki, Finland
ZMAS—Zoological Museum, Academy of Sciences, Leningrad
ZMPA—Zoological Museum, Academy of Sciences, Warsaw
ZMUL—Zoological Museum, University of Lund, Sweden
ZMUM—Zoological Museum, University of Moscow
ZSBS—Zoologische Sammlung Bayerischen Staates, Munich, West Germany

ACKNOWLEDGMENTS

We are indebted to many individuals who contributed to the planning and development of this catalog. We are especially grateful to the following specialists who helped to make it as complete and accurate as possible: Richard H. Foote, Systematic Entomology Laboratory (SEL), Agricultural Research Service (ARS), for his suggestions, guidance, and encouragement; C. W. Sabrosky, SEL, for valuable counsel on nomenclatural problems; J. F. Lawrence, Division of Entomology, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia, for his recommendations on higher categories; and more than 50 coleopterists in Canada, the United States, and Mexico for voluntarily contributing information about their specialty groups.

We wish to acknowledge the extensive computer-programming and editing-system support provided by members of the former Communications and Data Services Division of ARS during the early years of this project. We also thank Elaine Jamison for the data entry necessary for each fascicle.

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Family SCARABAEIDAE

1

Subfamilies RUTELINAE and DYNASTINAE

By Alan Hardy

The Rutelinae and Dynastinae are large, diverse groups found on every continent or major land mass in the temperate and tropical zones.

Rutelinae larvae are root feeders, many of grass or grass crops, and may be of economic concern. Adults are foliage feeders or may be nonfeeding. There are diurnal, nocturnal, and crepuscular behavior patterns, and many species are attracted to lights. Anomalini generally are nocturnal or crepuscular, spending the day buried in the soil, and are most readily taken at light. Rutelini are often diurnal, although some groups are strictly nocturnal. Diurnal representatives usually spend the night on the host plant, whereas nocturnal groups may pass the day on the host plant or in the soil. Rutelini often are spectacularly colorful.

Dynastinae larvae are root feeders or feed on decaying vegetation, and some are found in rotten logs. Adults are foliage or sap feeders or are nonfeeding. Nearly all species are nocturnal or crepuscular and spend the day buried in the soil, although a few remain on the host plant. Many dynastines are large and bear spectacular outgrowths or horns on the head, thorax, or both. These outgrowths or horns are generally confined to the males. This group includes the largest North American beetles.

The Rutelinae and Dynastinae are subject to population fluctuations that may result in local explosions of individuals. Major parasites of these groups include Hymenoptera (Tiphidae, Scoliidae, Ichneumonidae, Braconidae), Diptera (Tachinidae, Sarcophagidae), Acarina, (Pyemotidae and Tyroglyphidae), and the Acanthocephala (thorn- or spiny-head worms).

The catalogs of the Rutelinae (1918) and of the Dynastinae (1987) list 2,563 and 1,428 world species, respectively.

I extend thanks to the librarians at the University of California at Berkeley, Davis, and Riverside, to John Pinto, University of California at Riverside, and to H. Leech, California Academy of Sciences, for their assistance in locating difficult literature. R. W. L. Potts, California Academy of Sciences, was of great assistance in compiling this classification of the Anomalini. The late S. Endroedi, Hungarian National Museum, Budapest, answered questions on the Dynastinae.

This manuscript was received February 1974, revised January, 1981, and amended September 1984, and January 1989.

Subfamily RUTELINAE

Rutela Latreille, 1802; Rutelidae MacLeay, 1819; Phyllophaga metallica Burmeister, 1844;
Rutelinae Blanchard, 1850; Rutelides Lacordaire, 1856.

Revision: Casey, 1915 (N. Amer.); Ohaus, 1934 (worldwide, in part); Machatschke, 1957 (worldwide, in part). Keys: Casey, 1915: 2 (tribes); Ohaus, 1934: 4 (tribes); Arnett, 1962: 405 (tribes and genera). Larvae: Boeing, 1921 (classification); Ritcher, 1966 (species).

Tribe ANOMALINI

Melolonthites Laporte, 1840; Anisopliadae Burmeister, 1844; Melolonthites Blanchard, 1845 (in part); Anomalitae Blanchard, 1850; Anomalides Lacordaire, 1856; Anomalini Peringuey, 1902.

Revision: Casey, 1915 (N. Amer.); Machatschke, 1957 (worldwide); Potts, 1974 (N. Amer.).
Keys: Casey, 1915: 3; Machatschke, 1957: 25; Arnett, 1962: 405; Potts, 1974: 153.

The classification as presented herein is compiled from Potts (1974, 1976, 1977a, and 1977b), with reference to Machatschke (1957 and 1972).

The recent "Genera Insectorum" (Machatschke, 1957) and "Coleopterorum Catalogus" (Machatschke, 1972) contain numerous errors, and should be used with caution, especially where type-species have been designated in these works. In addition, there are a number of omissions of North American species from these catalogs.

Subtribe ANOMALINA

Anomalina Machatschke, 1957; Anomalini Potts, 1974.

Genus ANOMALA Samouelle

Anomala Samouelle, 1819: 191. Type-species: *Melolontha frischii* Fabricius (monot) = *dubia* (Scopoli).

Phyllopertha Stephens, 1830: 223. Type-species: Not yet designated. *Phyllopertha* is carried as a synonym of *Anomala* by Potts (1974: 149). It is regarded as valid by European workers.

Spilota Burmeister, 1844: 266. Type-species: *Melolontha marginata* Fabricius (design. by Arrow, 1917: 126).

Callistethus Blanchard, 1850: 198. Type-species: *Callistethus consularis* Blanchard (monot) = *auronitens* (Hope).

Pachystethus Blanchard, 1850: 201. Type-species: *Popillia vidua* Newman (monot).

Blitopertha Reitter, 1903: 85. Type-species: *Melolontha lineata* Fabricius (design. by Arrow, 1917: 127). No attempt has been made to include all subgenera and synonyms. For such a listing, see Machatschke (1957 and 1972).

Anomalepta Casey, 1915: 8. Type-species: *Anomala semilivida* LeConte (orig. des). Machatschke's (1957) claim that the type-species is designated by him is in error. Type-species clearly designated by Casey (1915).

Anomalopus Casey, 1915: 40 (as a subgenus; preoccupied Dumeril, 1851). Type-species: *Anomala rhizotrogoides* Blanchard (orig. des). Machatschke's (1957) claim to have designated the type-species is in error. Casey (1915) clearly designated type-species.

Hemispilota Casey, 1915: 45. Type-species: *Melolontha lucicola* Fabricius (design. by Machatschke, 1957: 30).

Oliganomala Casey, 1915: 38 (as subgenus of *Anomala*). Type-species: *Strigoderma exigua* Schwarz (orig. des).

Paranomala Casey, 1915: 12. Type-species: *Melolontha binotata* Gyllenhal (design. by Machatschke, 1957: 31). Machatschke's (1957) indication that Casey designated a type-species for this subgenus seems to be a error. I can find no evidence for this belief. Therefore, Machatschke's statement that the type is *Melolontha binotata* Gyllenhal is, I believe, a valid designation with Machatschke as designator.

Rhombonalia Casey, 1915: 5. Type-species: *Anomala cavifrons* LeConte (orig. des). Machatschke's (1957) claim to have designated the type-species is in error. Casey (1915) clearly designated the type-species.

Anomalopides Strand, 1928: 2 (replacement name for *Anomalopus* Casey, 1915: 40). Type-species: *Anomala rhizotrogoides* Blanchard (automat).

There has been no attempt here to compile an exhaustive synonymy for this large, widespread genus. For such synonymies, see Machatschke, 1957 or 1972. Arrow (1917: 127) and Machatschke (1957 and 1972) cite *Melolontha aenea* De Geer as type-species. *M. frischii* Fabricius has been carried as a form of *M. aenea*, which is itself now placed as a subspecies of *Scarabaeus dubia* Scopoli (= *Anomala dubia* (Scopoli)).

TAXONOMY: Potts, 1974, 1976, 1977a, and 1977b.

KEYS: Horn, 1884: 157; Schaeffer, 1906a: 1, and 1907: 60; Casey, 1915: 11; Potts, 1977b: 129.

adscita Robinson, 1941: 132 (*Rhombonalia*). AZ: Coconino Co., Tuba City; AZ.

SEX OF TYPE: M.

antennata Schaeffer, 1906a: 1. NM; NM TX; Mex.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 36.

arida Casey, 1915: 29. AZ; AZ; Mex.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

binotata Gyllenhal, 1817: 106 (*Melolontha*). Not given; MN WI MI ON/ CO/ NE KS IA MO IL IN OH KY/ NY PA NJ DE MD DC VA/ RI CT/ TX OK/ AR LA MS AL TN GA SC NC; Mex.

unifasciata Say, 1825: 199 (*Melolontha*). VA. The original description uses the name in combination with *Melolontha* but states *unifasciata* belongs to *Anomala*.
maculata Laporte, 1840: 136 (*Euchlora*). "Amerique du Nord". This is apparently a case of an uncorrected jr. homonym (with *maculatus* Guerin-Meneville, 1834).
marginella LeConte, 1854a: 81. WI.
compacta Casey, 1915: 15. LA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1943: 13, and 1966: 105.

REDESCRIPTION: Casey, 1915: 14.

butleri Howden, 1956: 258, fig. 8 (*Rhombonalia*). AZ: Cochise Stronghold, Dragoon Mts., 4850 ft. The type is from oak-juniper zone.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

carinifrons Bates, 1888: 249. Mex.: Chihuahua City; AZ NM TX; Mex. No lectotype has been selected.

camancha Wickham, 1913: 29. NM: Capitan Mt.

REDESCRIPTION: Casey, 1915: 7.

carlsoni Hardy, 1976a: 365, 2 figs. CA: Imperial Co., 2 mi. N.W. Glamis; CA.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

HOST: Sand dunes.

castaniceps Bates, 1888: 248. Mex: Jacala, Las Vigas, Ciudad in Durango; AZ; Mex. The U.S. distribution seems to be questionable.

cavifrons LeConte, 1868: 52. "on the Smoky Hill River"; CO/ NE KS/ AZ NM TX OK; Mex. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: MCZC.

apacheana Wickham, 1913: 30. TX: El Paso.

cochiseana Casey, 1915: 6 (*Rhombonalia*). AZ: Cochise Co., San Bernardino Ranch.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

comes Casey, 1915: 6 (*Rhombonalia*). KS: Trego and Rooks Cos. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

transversa Casey, 1915: 7 (*Rhombonalia*). TX.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 6.

delicata Casey, 1915: 27. AZ; AZ NM TX; Mex.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

moquina Casey, 1915: 31. AZ. Male *moquina* are synonymous with *A. delicata*; female *moquina* are synonymous with *A. digressa*. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

papagoana Casey, 1915: 30. AZ: Baboquivari Mts. and Cochise Co. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

centralis (of authors, not LeConte).

diabla Potts, 1976: 220 (*Anomala*). TX: Devils R. nr. Del Rio; TX.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

digressa Casey, 1915: 27. Mex.; AZ; Mex.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

moquina Casey, 1915: 31. AZ. Male *moquina* are synonymous with *A. delicata*; female *moquina* are synonymous with *A. digressa*. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

sagax Casey, 1915: 30. AZ.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

dubia Scopoli, 1763: 3 (*Scarabaeus*) (reported introduction from Europe). "Carolina"; NJ; Old World. The record of this species in North America reported by Blackwelder (1939) would seem to need further verification.

ellipsis Casey, 1915: 15. AZ; AZ NM. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

luteipennis (in Horn, 1884: 159). (misidentification).

exigua Schwarz, 1878: 362 (*Strigoderma*) (no lectotype has been selected). FL: E. of Lake Altapopka; FL. Note in Potts (1977a: 37) states, "Probably extinct...".

REDESCRIPTION: Casey, 1915: 39.
HOST: "Oak shrubs on sand hill" (Schwarz, 1878).

eximia Potts, 1976: 221. FL: Highlands Co., Archbold, Biol. Stn.; FL.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

flavilla coachellae Potts, 1977a: 37. CA: Riverside Co., Coachella; CA.

TYPE DEPOSITORY: CASC.
SEX OF TYPE: M.

flavilla flavilla Bates, 1888: 227. Mex.: Tres Marias Isls., Ventanas in Durango; CA/ AZ; Mex. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

parvula (in Horn, 1884: 158). (misidentification).

tenera Casey, 1915: 37. AZ: Somerton.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

centralis (in Saylor, 1948c: 354). (misidentification).

flavipennis aransas Potts, 1977a: 38. TX: Aransas Co., Goose Isl. St. Pk.; TX.

TYPE DEPOSITORY: CASC.
SEX OF TYPE: M.

flavipennis flavipennis Burmeister, 1844: 249. "North America"; NE KS IL IN OH/ NJ MD VA/ NM TX OK/ AR LA MS AL GA SC NC FL; Mex. The type-series is represented by both males and females. No lectotype has been selected.

dichroa Melsheimer, 1845: 140. VA.

amissa Casey, 1915: 24 (as subspecies of *flavipennis*). CA? possibly AZ. Arizona record is probably in error.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

modulata Casey, 1915: 23 (as subspecies of *flavipennis*). KS: McPherson and Lucas. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1943: 14, and 1966: 105.

REDESCRIPTION: Casey, 1915: 23.

HOST: Pastureland.

flavipennis luteipennis LeConte, 1854a: 80. "Laredo to Ringgold Barracks"; NE KS/ TX OK; Mex.

stigmatella Casey, 1915: 22. KS: McPherson.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

kansana Hayes, 1924: 138. KS: Riley and Clay Cos.

IMMATURE STAGES: Ritcher, 1943: 15, and 1966: 106 (larvae); Hayes, 1927 (eggs, larvae, pupae).

REDESCRIPTION: Casey, 1915: 34; Hayes and McCollough, 1925.

ECOLOGY: Hayes and McCollough, 1924, and 1925; Hayes, 1927.

HOST: Larvae: wheat (?); adults: pasture grass, lamb's quarters, smartweed, horsethistle, strawberry leaves, sorghums, corn, wheatheads, wheat, smart clover, sumac, rye, dogwood.

flavipennis okaloosensis Potts, 1977a: 38. FL: Okaloosa Co., Dustin; FL.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

flavipennis subquadrata Casey, 1915: 21. VA: Fredericksburg; NJ: Anglesea; NJ MD VA/ GA.

The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

HOST: "probably coastal or near" (Potts, 1977a: 38).

foraminosa Bates, 1888: 229. Mex., Br. Hond., Guat., Pan.; TX; Mex., C. Amer. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

hardyorum Potts, 1976: 221. CA: Imperial Co., 3 mi. NW of Glamis; CA.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

imperialiae Potts, 1976: 222. CA: Imperial Co., Winterhaven; CA/ AZ.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

innuba Fabricius, 1787: 22 (*Melolontha*). Not given; WI/ NE KS IA MO IL IN OH KY/ NY PA NJ DE MD DC WV VA/ CT/ NM TX OK/ AR MS AL TN GA SC NC FL; Mex.

minuta (in Horn, 1884: 159). (misidentification).

medorensis Casey, 1915: 35. KS: Medora, Onaga and Benedict. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

piceola Casey, 1915: 35 (as subspecies of *innuba*). FL.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

undulata (in Casey, 1915: 32).

IMMATURE STAGES: Ritcher, 1943: 14, and 1966: 106.

REDESCRIPTION: Casey, 1915: 34.

ECOLOGY: Hayes, 1925: 82.

HOST: Larvae: bluegrass, pastureland. Adults: timothy, wheat.

insitiva Robinson, 1938: 112. TX: Brownsville; TX.

TYPE DEPOSITORY: ANSP.

SEX OF TYPE: M.

polychalca (in Schaeffer, 1906a: 2).

kanei Potts, 1976: 223. AZ: Coconino Co., 2 mi. S. of Moenkopi; UT/ AZ.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

lucicola Fabricius, 1798: 132 (*Melolontha*). "America Boreali"; MI ON/ IL IN OH KY/ NY PA NJ DE MD DC VA/ ME NH VT MA RI CT/ TN GA SC NC FL; W. Indies.

atrata Fabricius, 1801b: 174 (*Melolontha*). "America Boreali".

moerens Fabricius, 1801b: 174 (*Melolontha*). "America Boreali".

quadrimaculata Drapiez, 1820: 276 (*Melolontha*). "Amerique Septentrionale".

nigritula Laporte, 1840: 137 (*Euchlora*). "North America".

cinctella Burmeister, 1844: 269. "North America".

SEX OF TYPE: F.

pinicola Melsheimer, 1845: 141. PA.

phylloperthoides Nonfried, 1894: 122 (preoccupied Fairmaire, 1888). "Brasilia septentr.".

alterata Arrow, 1915: 256 (replacement name for *phylloperthoides* Nonfried).

IMMATURE STAGES: Ritcher, 1943: 18, and 1966: 108.

REDESCRIPTION: Casey, 1915: 45.

HOST: Larvae: larch seedlings.

ludoviciana Schaeffer, 1906a: 3. LA: Vowells Mill; ND/ MN WI/ NE KS IA IL IN/ TX OK/ LA MS TN; W. Indies. No lectotype has been selected.

pubescens Blatchley, 1910: 984. IN: Lake and Vigo Cos. No lectotype has been selected.

IMMATURE STAGES: Ritcher, 1943: 16, and 1966: 106.

REDESCRIPTION: Casey, 1915: 16.

marginata Fabricius, 1792: 164 (*Melolontha*). Not given; KS MO IN OH KY/ NJ MD DC VA/ AR LA MS AL TN GA SC NC FL; Mex. Original description gives no type-locality, but Fabricius later (1801b: 169) cites "America meridionali".

annulata Germar, 1824: 121 (*Melolontha*). "America septentrionali (Georgia, Kentucky)".

incolumis Casey, 1915: 43 (*Spilota*). PA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1943: 19, and 1966: 108.

REDESCRIPTION: Casey, 1915: 42.

HOST: Larvae: wild grass, pastureland.

mendica Casey, 1915: 20. FL: Marion Co.; GA SC FL.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

minuta Burmeister, 1844: 249. "North America"; AL GA SC NC FL. The type series is represented by both males and females. No lectotype has been selected.

IMMATURE STAGES: Ritcher, 1943: 16 and 1966: 107.

REDESCRIPTION: Casey, 1915: 19.

nimbosa Casey, 1915: 26. AZ; AZ NM; Mex. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

lurida (in Horn, 1884: 161). (misidentification).

inconstans (in Schaeffer, 1907: 69). (misidentification).

oblivia Horn, 1884: 163. PA to GA; MI/ NY PA NJ MD DC VA/ ME MA CT/ TN GA SC NC FL. No lectotype has been selected.

maritima Casey, 1915: 47 (*Spilota*) (as subspecies of *oblivia*). NJ: seashore at Atlantic City. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1943: 120, and 1966: 108.

REDESCRIPTION: Casey, 1915: 46.

orientalis Waterhouse, 1875: 108 (*Phyllopertha*) (introduced into N. Amer.). Japan: Kawachi; Nagasaki; Hakodadi; NY NJ/ CT; Other: Japan. Described with three color varieties.

IMMATURE STAGES: Ritcher, 1943: 18 and 1966: 107.

HOST: Larvae: lawn turf.

parvula Burmeister, 1844: 247. N. Amer.; MS GA SC NC FL.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 37.

robinsoni Potts, 1974: 150 (replacement name for *floridana* Robinson). FL: Dade Co., Royal Palm Park; FL.

floridana Robinson, 1941: 133 (*Pachystethus*) (preoccupied Casey, 1915: 33). FL: Dade Co., Royal Palm Park.

SEX OF TYPE: M.

semilivida LeConte, 1878: 403. FL: Tampa and Capron; AL GA SC NC FL.

TYPE DEPOSITORY: MCZC.

SEX OF TYPE: M.

flaccida Casey, 1915: 10 (*Anomalepta*). FL.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 9.

suavis Potts, 1976: 225. TX: Winkler Co., 4 mi. NE. of Kermit; TX.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

tibialis Schaeffer, 1906a: 5. TX; TX.

SEX OF TYPE: F.

REDESCRIPTION: Casey, 1915: 40.

umbra Casey, 1915: 16. NJ: Atlantic City; NJ DE MD/ MS GA SC NC FL. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

servilis Casey, 1915: 16. FL: Jacksonville.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

undulata Melsheimer, 1845: 140. VA; WI MI ON/ KS MO IL IN OH KY/ PA NJ DE MD DC VA/ TX/ AR MS AL TN GA SC NC FL; Mex.

varians Burmeister, 1844: 248 (preoccupied Fabricius, 1801b: 173). N. Amer., Mex., Brazil.

dubia Blatchley, 1910: 984 (as variety of *undulata*). IN: "throughout the state". This name is a jr. homonym (uncorrected) of *dubia* Scopoli, 1763. No lectotype has been selected.

canadensis Casey, 1915: 33 (as subspecies of *nigropicta*). ON. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

floridana Casey, 1915: 33 (as a subspecies of *nigropicta*). FL: Key Largo.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

nigropicta Casey, 1915: 33. NC and KY to FL: Lake Worth. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1943: 17 and 1966: 107.

HOST: Larvae: bluegrass, pastureland.

saginulata Casey, 1915: 34 (as subspecies of *nigropicta*). IN to KS. The type series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1943: 17, and 1966: 107 (*nigropicta*).

REDESCRIPTION: Casey, 1915: 34.

HOST: Larvae: bluegrass, pastureland (*nigropicta*).

Genus STRIGODERMA Burmeister

Strigoderma Burmeister, 1844: 310 (validation of a *nomen nudum* of Dejean (1836: 175)). Type-species: *Strigoderma sulcipennis* Burmeister (design. by Casey, 1915: 48).

Alamona Casey, 1915: 61. Type-species: *Alamona parviceps* Casey (orig. des).

Strigodermella Casey, 1915: 59. Type-species: *Melolontha pygmaea* Fabricius (orig. des).

arbicola Fabricius, 1792: 171 (*Melolontha*). "America"; KS/ NJ VA/ RI/ AZ TX; Mex.

testaceipennis Nonfried, 1893: 295 (as variety). "Indianer-Reservations". No lectotype has been selected.

angustula Casey, 1915: 57 (original description published without type-locality. Type data from specimen). Mex.: Chihuahua, Sierra Madre Mts., Colonia.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

irregularis Casey, 1915: 56 (as subspecies of *arboricola*). NJ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

obesula Casey, 1915: 54. KS.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

puritana Casey, 1915: 56 (as subspecies of *arboricola*). RI: Watch Hill. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

quaternaria Casey, 1915: 55 (as subspecies of *obesula* Casey). KS.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

virginica Casey, 1915: 56 (as subspecies of *arboricola*). VA: Nelson Co. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

arboricola (of authors).

IMMATURE STAGES: Ritcher, 1943: 21, and 1966: 109.

REDESCRIPTION: Casey, 1915: 55.

ECOLOGY: Hayes, 1921; Hoffman, 1936; Ritcher, 1945: 13.

HOST: Larvae: peanuts. Adults: wild rose, peanuts, clover blossoms, rose, *Opuntia humifusa*, *Monarda punctata*, *Dianthera americana*, *Verbena*, blackberry, timothy, elderberry, dewberry, etc. (See Hayes, 1921).

latitibia Schaeffer, 1907: 71 (No lectotype has been selected). TX: Galveston; TX.

SEX OF TYPE: M.

parviceps Casey, 1915: 61 (*Alamona*). TX: Del Rio.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 62.

pygmaea Fabricius, 1798: 133 (*Melolontha*). "Carolina"; KS/ NJ/ OK/ FL.

minima Drapiez, 1819: 291 (*Melolontha*). "Amerique septentrionale".

floridana Ohaus, 1905: 285. FL: Titusville.

knausi Brown, 1925: 200 (*Strigodermella*). KS: Medora.

SEX OF TYPE: M.

oklahomensis Hatch, 1930: 24 (*Strigodermella*). OK: LeFlore Co., Kaimchi R. Exact type locality is 8 mi. W. of state line.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1945: 12, and 1966: 110.

REDESCRIPTION: Casey, 1915: 59.

HOST: Larvae: soil.

sulcipennis Burmeister, 1844: 316. Mex.; AZ TX; Mex.

pimalis Casey, 1884: 181 (no lectotype has been selected). AZ.

TYPE DEPOSITORY: USNM.

prolixella Casey, 1915: 53 (as subspecies of *pimalis*). Southern AZ. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

subrutilans Casey, 1915: 54. Southern AZ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

texana Casey, 1915: 55. TX. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

REDESCRIPTION: Casey, 1915: 52.

teapensis Bates, 1888: 258. Mex.: Teapa; TX; Mex.

REDESCRIPTION: Cartwright, 1957: 32.

viridicollis Schaeffer, 1907: 72. NM; AZ NM; Mex. No lectotype has been selected.

SEX OF TYPE: M.

sonorica Casey, 1915: 58. Mex.: Chihuahua Sierra Mts., Colonia Garcia.

REDESCRIPTION: Casey, 1915: 56.

Subtribe ANISOPLIINA

Anisopliina Ohaus, 1918: 155; Machatschke, 1972: 253; Anisopliini Potts, 1974: 152.

Genus ANOMALACRA Casey

Anomalacra Casey, 1915: 10. Type-species: *Anomalacra cuneata* Casey (orig. des). Machatschke (1957: 30) states the type of this genus is *Anomala cuneata*, but then does not include *cuneata* in his synoptic listing of *Anomala*. I am assuming his usage of *Anomala* and the omission of *cuneata* are both lapsi.

clypealis Schaeffer, 1907: 68 (*Anomala*). "Arizona (Bakerville?)"; AZ; Mex.

SEX OF TYPE: M.

cuneata Casey, 1915: 11. Mex.: Chihuahua, Sierra Madre Mts., Colonia Garcia.

wernerii Howden, 1956: 260, figs. 1, 6, 7. AZ: Cochise Stronghold, Dragoon Mts., 4850 ft.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 27.

ECOLOGY: Howden, 1956: 262.

Subtribe POPILLIINA

Popilliina Machatschke, 1957; Popilliini Potts, 1974: 152.

Genus POPILLIA Serville

Popillia Serville, 1828: 367. Type-species: *Trichius bipunctata* Fabricius (design. by Arrow, 1917: 58). Type-species designation needs further review, may be designated elsewhere at an earlier date. No attempt is made to present synonyms here. For an extensive list, consult Machatschke, 1972.

japonica Newman, 1841: 43 (introduced into N. Amer). Japan; IN OH KY/ NY PA NJ DE MD DC WV VA/ ME NH VT MA RI CT/ GA SC NC; Other: Japan.

IMMATURE STAGES: Ritcher, 1943: 20 and 1966: 109; Boeving, 1921.

Subtribe LEPTOHOPLIINA

Leptohopliini Potts, 1974: 152.

Genus LEPTOHOPLIA Saylor

Leptohoplia Saylor, 1935: 132. Type-species: *Leptohoplia testaceipennis* Saylor (orig. des).

TAXONOMY: Howden and Hardy, 1971.

testaceipennis Saylor, 1935: 133. CA: "Imperial Co." (probably Imperial Valley); CA.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

REDESCRIPTION: Howden and Hardy, 1971: 338.

Tribe RUTELINI

Rutelites Laporte, 1840; *Rutelidae* Burmeister, 1844; *Rutelides* Blanchard, 1845; *Rutelitae* Blanchard, 1850; *Rutelides* varies Lacordaire, 1856; *Rutelin*: Ohaus, 1918.

Revision: Casey, 1915 (N. Amer.); Ohaus, 1934 (worldwide). Keys: Casey, 1915: 67 (genera); Ohaus, 1934: 32 (subtribes); Arnett, 1962: 406 (genera).

The classification of the Rutelini is based upon Ohaus (1934), with later literature updates. The generic concepts in the Areodina are in need of review and redefinition.

Subtribe AREODINA Ohaus, 1918

Revision: Ohaus, 1934 (world); Hardy, 1971 (N. Amer.). Keys: Ohaus, 1934: 34 (world genera); Hardy, 1971: 241 (N. Amer. genera).

Genus COTALPA Burmeister

Cotalpa Burmeister, 1844: 423. Type-species: *Scarabaeus lanigera* Linnaeus (orig. des).

Ciocotalpa Saylor, 1940: 191 (as subgenus). Type-species: *Cotalpa consobrina* Horn (orig. des).

KEYS: Casey, 1915; Saylor, 1940: 190.

consobrina Horn, 1871: 337. AZ: Ft. Whipple; AZ; Mex.

REDESCRIPTION: Casey, 1915: 91.

HOST: Adults: cottonwood leaves.

flavida Horn, 1878: 53. UT: St. George; CA NV/ UT/ AZ NM.

REDESCRIPTION: Casey, 1915: 91.

lanigera lanigera Linnaeus, 1758: 350. "India"; WI/ IA IN/ NY NJ VA/ CT/ AZ/ LA FL. The western goldsmith beetle is under the name *Cotalpa tau* (Essig, 1926: 446). This name may have been intended to refer to *C. flavida*.

tau Wickham, 1905: 2. AZ: Prescott.

TYPE DEPOSITORY: USNM.

molaris Casey, 1915: 90. LA: Vowell's Mill. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

vernicata Casey, 1915: 91. NY; Peekskill, VA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1945: 6, and 1966: 113.

REDESCRIPTION: Casey, 1915: 89.

ECOLOGY: Lockwood, 1869 and 1870; Saunders, 1879: 21; Wickham, 1905: 2; Hayes, 1925: 97; Ritcher, 1945: 8; Joutel, 1898: 252.

HOST: Adults: poplar, white poplar, oak, hickory, silver maple, willow, cottonwood, sweet gum, pear, Lawton blackberry. Larvae: raspberry bushes, strawberries, corn, grasses.

lanigera obesa Casey, 1915: 90. IN, IA, WI; WI/ IA IN. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

subcribrata Wickham, 1905: 3. KS: Medora; CO/ KS/ TX.

REDESCRIPTION: Casey, 1915: 89.

HOST: Adults: willow.

Genus PSEUDOCOTALPA Hardy

Pseudocotalpa Hardy, 1971: 238. Type-species: *Pseudocotalpa andrewsi* Hardy (orig. des).

REDESCRIPTION: Hardy, 1974c: 243.

ECOLOGY: Hardy, 1971: 240.

KEYS: Hardy, 1974c: 247.

andrewsi Hardy, 1971: 238. CA: Imperial Co., Glamis; CA.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

TAXONOMY: Hardy, 1974c: 243.

HOST: Unknown.

giulianii Hardy, 1974c: 243, figs. 2, 5, 8, 11. NV: Nye Co., Big Dune; NV.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

ECOLOGY: Hardy, 1976b: 301.

Genus PARACOTALPA Ohaus

Paracotalpa Ohaus, 1915: 256. Type-species: *Cotalpa ursina* Horn (orig. des).

Pocalta Casey, 1915: 92. Type-species: Not yet designated.

KEYS: Saylor, 1940: 194.

deserta Saylor, 1940: 195. CA: San Diego; CA; Mex.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: F.

ECOLOGY: Hardy, 1972a.

granicollis Haldeman, 1852: 374, pl. IX, fig. 11 (*Cotalpa*). "Valley of the Great Salt Lake"; WA
OR ID/ CA NV/ UT.

pubicollis Casey, 1915: 98 (*Pocalta*). UT: Stockton. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 98.

ECOLOGY: Jorgensen, 1963; Allred and Beck, 1965.

puncticollis LeConte, 1863: 78 (*Cotalpa*). NM; CA NV/ AZ NM.

TYPE DEPOSITORY: MCZC.

REDESCRIPTION: Casey, 1915: 93.

ECOLOGY: Cheary, Hardy and Robertson, 1972.

HOST: *Juniperus* spp.

ursina Horn, 1867: 168 (*Cotalpa*). "Southern Coast Range...., on road to Ft. Yuma"; CA; Mex.,

Other: Baja Calif. N. Total type-locality citation is as follows: "Southern Coast Range; near base of S.E. Sierras; Owens Valley; along the mountainous region between Temescal and Laguna Grande, on road to Ft. Yuma.".

brevis Casey, 1915: 95 (*Pocalta*). CA: San Diego Co., Coronado.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

laevicauda Casey, 1915: 95 (*Pocalta*). Southern CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

nigripennis Casey, 1915: 97 (*Pocalta*). Southern CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

rotunda Casey, 1915: 96 (*Pocalta*) (No lectotype has been selected). CA: San Bernardino.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

rubripennis Casey, 1915: 97 (*Pocalta*). CA: near San Diego. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

seriata Casey, 1915: 96 (*Pocalta*). Southern CA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

leonina Fall, 1932: 203 (*Cotalpa*). CA: Los Angeles Co., Antelope Valley.

piceola Saylor, 1940: 197 (as subspecies). CA: Monterey Co., Lewis Creek.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1966: 111.

REDESCRIPTION: Casey, 1915: 94.

ECOLOGY: Wickham, 1905: 2, 4.

HOST: Adult: California poppy, *Artemisia*. Larvae: roots of *Artemisia*.

COMMON NAME: The little bear (Essig, 1926: 446).

Genus PARABYRSOPOLIS Ohaus

Parabyrsopolis Ohaus, 1915: 256. Type-species: *Byrsopolis lanigera* Bates (orig. des) = *batesi* (Ohaus).

Parareoda Casey, 1915: 99. Type-species: *Parareoda rufobrunnea* Casey (orig. des).

Parabysopolis (error in Arnett, 1962: 424).

arizonae Ohaus, 1912: 313 (*Byrsopolis*). AZ; AZ; Mex.

rufobrunnea Casey, 1915: 100 (*Parareoda*). AZ: Huachuca Mts.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

TAXONOMY: Hardy, 1977: 92.

REDESCRIPTION: Casey, 1915: 100.

Subtribe PELIDNOTINA

Pelidnotina Ohaus, 1918; *Pelidnotinae* Bates, F., 1904.

Revision: Ohaus, 1934: 50 (world); Bates, F., 1904: 249. Keys: Ohaus, 1934: 50 (world genera).

Genus PLUSIOTIS Burmeister

Plusiotis Burmeister, 1844: 417. Type-species: *Pelidnota victorina* Hope (design. by Ohaus, 1934: 61).

Plusiotina Casey, 1915: 84. Type-species: Not yet designated. Machatschke (1972: 12) indicates *Plusiotis woodi* Horn as the type-species of this genus. This is an invalid designation, since *woodi* was not included in the genus at the time of description.

ECOLOGY: Boucard, 1875: 124; Bates, H. W., 1888: 279; Biedermann, 1907: 7; Ohaus, 1908: 408.

KEYS: Casey, 1915: 81; Cazier, 1951: 4.

beyeri Skinner, 1905: 289. AZ: Huachuca Mts., Carr Canyon, Miller Canyon; AZ.

ampliata Casey, 1915: 82. AZ: Cochise Co.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

ocularis Casey, 1915: 83 (as subspecies of *beyeri*). Southern AZ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 82; Arnett, 1973: 14.

ECOLOGY: Biedermann, 1907: 7; Coolidge, 1911: 326.

HOST: Adults: Emory oak.

gloriosa LeConte, 1854b: 221. "Copper Mines and at Camp no. 6"; AZ NM TX; Mex.

REDESCRIPTION: Casey, 1915: 81; Arnett, 1973: 15.

ECOLOGY: Young, 1957: 67; Smyth, 1960; Howden, 1960: 462.

HOST: Adult: *Juniperus* spp.

COMMON NAME: "The Silver Beetle" (Essig, 1926: 445).

lecontei Horn, 1882: 120. AZ: Tucson and Prescott; NM; AZ NM; Mex.

aeruginis Casey, 1915: 85 (*Plusiotina*). Mex.: Sierra Madre Mts., Chihuahua, Colonia Garcia.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

angusta Casey, 1915: 86 (*Plusiotina*). AZ: Cochise Co.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

sonorica Casey, 1915: 86 (*Plusiotina*). Mex.: Sierra Madre Mts., Chihuahua, Colonia Garcia. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: MF.

subenodis Casey, 1915: 85 (*Plusiotina*). Mex.: Durango.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 87; Arnett, 1973: 15.
HOST: Adults: leaves of oak and black walnut.

woodii Horn, 1885: 124. TX: Rio Grande; TX; Mex.

IMMATURE STAGES: Ritcher, 1948: 210 and 1966: 111.
REDESCRIPTION: Casey, 1915: 81; Arnett, 1973: 14.
HOST: Adults: walnut trees.

Genus PELIDNOTA MacLeay

Pelidnota MacLeay, 1819: 157. Type-species: *Scarabaeus punctata* Linnaeus (monot).

Aglycoptera Sharp, 1885: xxiii. Type-species: *Aglycoptera lacerdae* Sharp (orig. des) = *burmeisteri* (Burmeister).

Pelidnotidia Casey, 1915: 77 (as subgenus). Type-species: *Pelidnota strigosa* Laporte (orig. des).

TAXONOMY: Hardy, 1974a: 89; Hardy, 1975.
KEYS: Casey, 1915: 70.

lucae LeConte, 1863: 78. Mex.: Baja CA, Cape San Lucas; CA; Mex. This species is included on basis of questionable old specimen labels. It's distribution probably does not include the U.S.

TYPE DEPOSITORY: MCZC.
REDESCRIPTION: Casey, 1915: 75.

lugubris LeConte, 1874: 54. AZ; AZ NM; Mex.

TYPE DEPOSITORY: MCZC.
REDESCRIPTION: Casey, 1915: 76.

punctata Linnaeus, 1758: 350 (*Scarabaeus*). India; SD/ MI ON/ NE KS IA MO IL IN OH KY/ NY PA NJ DE MD DC WV VA/ ME NH MA RI CT/ TX OK/ AR LA MS AL TN GA SC NC FL. The type-locality is given as "India" in Linnaeus (10th ed., 1758) and as "Carolina" in Linnaeus (12th ed., 1767).

lutea Olivier, 1789: 23 (*Melolontha*). Type locality not given.

TYPE DEPOSITORY: Apparently lost.

brevicollis Casey, 1915: 74 (as subspecies). FL: Jacksonville.

TYPE DEPOSITORY: USNM (Type no. 48,537).
SEX OF TYPE: M.

brevis Casey, 1915: 72 (as subspecies). NY: Long Island.

TYPE DEPOSITORY: USNM (type no. 48,529).
SEX OF TYPE: F.

debiliceps Casey, 1915: 73 (as subspecies). NJ: Atlantic City.

TYPE DEPOSITORY: USNM (type no. 48,533).
SEX OF TYPE: F.

hudsonica Casey, 1915: 74 (as subspecies). NY: Peekskill. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM (cotype no. 48,536).

oblonga Casey, 1915: 73. LA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM (cotype no. 48,532).

pallidipes Casey, 1915: 74 (as subspecies). VA to MS. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM (cotype no. 48,535).

ponderella Casey, 1915: 73 (as subspecies). DC.

TYPE DEPOSITORY: USNM (type no. 48,534).

SEX OF TYPE: F.

strenua Casey, 1915: 72 (as subspecies). "Probably Indiana".

TYPE DEPOSITORY: USNM (type no. 48,528).

SEX OF TYPE: F.

tarsalis Casey, 1915: 74. NY: Peekskill.

TYPE DEPOSITORY: USNM (type no. 48,539).

SEX OF TYPE: F.

texensis Casey, 1915: 74 (as subspecies). TX: Horristo. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM (cotype no. 48,538).

IMMATURE STAGES: Ritcher, 1945: 10, and 1966: 114.

TAXONOMY: Hardy, 1974a; Hardy 1975: 30.

REDESCRIPTION: Casey, 1915: 71; Hardy, 1975: 30.

ECOLOGY: Ritcher, 1945: 11; Harris, 1842: 23; Riley, 1871: 77; Saunders, 1874: 141; Hayes, 1925: 89.

HOST: Adults: grapes. Larvae: rotten wood (soft maple, oak, hackberry, apple, elm, sycamore and walnut).

Subtribe PARASTASIINA Ohaus, 1918

Revision: Ohaus, 1934 (world). Keys: Ohaus, 1934: 91 (world genera).

Genus PARASTASIA Westwood

Parastasia Westwood, 1841: 204. Type-species: *Parastasia canaliculata* Westwood (orig. des). No attempt is made to include all synonyms for this genus. For complete generic synonymy see Machatschke, 1972: 36.

Polymoechus LeConte, 1856: 23. Type-species: *Polymoechus brevipes* LeConte (monot).

TAXONOMY: Arrow, 1899; Ohaus, 1900a; Horn, 1882 (as *Polymoethus*) (revisions).

ECOLOGY: Schioedte, 1874.

brevipes *brevipes* LeConte, 1856: 24 (*Polymoechus*). PA, NY, MO; MO/ NY PA.

IMMATURE STAGES: Ritcher, 1945: 8 and 1966: 114.

REDESCRIPTION: Casey, 1915: 103.

ECOLOGY: Ritcher, 1945: 9.

HOST: Larvae: dead wood (chinquapin oak, sycamore).

brevipes *discernens* Casey, 1915: 104 (*Polymoechus*). IN; IN.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

conicollis Casey, 1915: 104 (*Polymoechus*). PA; PA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

Subtribe RUTELINA Ohaus, 1918

Revision: Ohaus, 1934 (world). Keys: Ohaus, 1934: 108 (world genera).

Genus RUTELA Latreille

Rutela Latreille, 1802: 151. Type-species: *Scarabaeus lineola* Linnaeus (design. by Macleay 1819: 72). Type species needs clarification. MacLeay made an early designation; however Latreille (1810: 428) seems to indicate *Cetonia chrysis* Fabricius as type. No attempt is made here to list complete generic synonymies. See Machatschke (1972) for such synonymies.

ECOLOGY: Lacordaire, 1830; Ohaus, 1900b, 1908, and 1909.

formosa Burmeister, 1844: 383. Cuba; FL; W. Indies.

IMMATURE STAGES: Ritcher, 1966: 112.

REDESCRIPTION: Casey, 1915: 101; Chapin, 1932: 283.

HOST: Larvae: decaying wood.

Subfamily DYNASTINAE

Dynastidae MacLeay, 1819; Xylophili Latreille, 1829; Xylophila Burmeister, 1847; Dynastides Lacordaire, 1856; Dynastini Gemminger and Harold, 1869.

Revision: Casey, 1915: 107 (N. Amer.); Endroedi, 1966, 1969, 1976a, 1976b, 1977a, and 1977b (world). Keys: Casey, 1915: 107 (tribes); Arnett, 1962: 406 (N. Amer. genera); Endroedi, 1966: 30 (tribes).

The classification presented below is that of Endroedi (1966, 1969, 1976a, 1976b, 1977a, and 1977b) with a few modifications. Some of the species cited below are undoubtedly not a part of the fauna of the areas treated here. *Cyclocephala* especially contains species with distributional records open to question.

Tribe CYCLOCEPHALINI

Cyclocephalidae Burmeister, 1847; Cyclocephalides Lacordaire, 1856; Cyclocephalini LeConte and Horn, 1883; Cyclocephalinae Bates, H. W., 1888.

Revision: Casey, 1915 (N. Amer.); Saylor, 1945 (N. Amer.); Endroedi, 1966 (world). Keys: Casey, 1915: 110; Saylor, 1945: 379; Arnett, 1962: 406; Endroedi, 1966: 37.

Genus CYCLOCEPHALA Latreille

Cyclocephala Latreille, 1829: 552. Type-species: *Melolontha signata* Fabricius (design. by Casey, 1915: 112). The species name *signata* now equals *amazona signata* Fabricius.

Subgenus ACLINIDIA Casey

Aclinidia Casey, 1915: 113. Type-species: *Melolontha castanea* Olivier (orig. des). This name is mentioned in Endroedi, 1966: 62 but with no further treatment.

Halotosia Casey, 1915: 113. Type-species: *Cyclocephala fasciolata* Bates (orig. des). This name is mentioned in Endroedi, 1966: 62 but with no further treatment.

Diapatalia Casey, 1915: 111. Type-species: *Cyclocephala discicollis* Arrow (orig. des).

Dichromina Casey, 1915: 112. Type-species: *Cyclocephala dimidiata* Burmeister (orig. des) = *melanocephala* (Fabricius).

Graphalia Casey, 1915: 159 (as subgenus). Type-species: Not yet designated.

Homochromina Casey, 1915: 113. Type-species: *Homochromina divisa* Casey (orig. des) = *sanguinicollis* (Burmeister).

Isocoryna Casey, 1915: 136 (as subgenus). Type-species: *Isocoryna jalapensis* Casey (monot).

Mononidia Casey, 1915: 110. Type-species: *Cyclocephala carbonaria* Arrow (orig. des).

Ochrosidia Casey, 1915: 112. Type-species: *Melolontha immaculata* Olivier (orig. des).

Plagiosalia Casey, 1915: 135 (as subgenus). Type-species: Not yet designated.

Spilosota Casey, 1915: 112. Type-species: *Spilosota nubeculina* Casey (orig. des) = *hirta* (LeConte).

Stigmalia Casey, 1915: 111. Type-species: *Cyclocephala mafaffa* Burmeister (orig. des).

Aspidolites Hoehne, 1922b: 374. Type-species: *Aspidolea atricollis* Hoehne (monot) = *histrionica* (Burmeister).

Aspidolella Prell, 1936: 146 (replacement name for *Aspidolites* Hoehne, 1922b). Type-species: *Aspidolea atricollis* Hoehne (automat) = *histrionica* (Burmeister).

Albridarolla Bolivar, et al., 1963: 182. Type-species: *Cyclocephala ocellata* Burmeister (orig. des).

Paraclinidia Martinez, 1965: 13 (as subgenus). Type-species: *Cyclocephala endrodi* Martinez (orig. des). This name is mentioned in Endroedi, 1966: 62 but with no further treatment.

TAXONOMY: Casey, 1915 (parts); Saylor, 1945 (N. Amer.); Endroedi, 1966 (world).

KEYS: Casey, 1915: 130; Saylor, 1945: 381; Endroedi, 1966: 63.

borealis Arrow, 1911: 172 (replacement name for *villosa* Burmeister). "Charlestown, North America"; CA/ NE KS IL IN/ NY PA DC VA/ TX/ AR AL FL; Mex. Endroedi reports type of *C. villosa* Burmeister lost, and designates a neotype for *villosa* (now *borealis*) as follows: male, Falls Church Va. in the Endroedi Collection.

villosa Burmeister, 1847: 54. "Charlestown, North America".

SEX OF TYPE: M.

parallelia Casey, 1915: 144 (*Ochrosidia*). FL. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1944: 18 (larvae), and 1966: 132.

REDESCRIPTION: Casey, 1915: 146 (*C. villosa*); Endroedi, 1966: 158.

ECOLOGY: Hayes, 1918: 186.

HOST: Larvae: Soil of pasturelands and lawns (Ritcher, 1966: 133); severely damages lawns.

forsteri *forsteri* Endroedi, 1963: 325. Bolivia: Chiquitos Robore; S. Amer. The nominate subspecies *forsteri forsteri* Endroedi is not North American.

TYPE DEPOSITORY: ZSBS.

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1966: 202.

forsteri mexicoi Endroedi, 1966: 202. NM; NM. Data would seem to need verification of U.S. record. The holotype is without data, the allotype is from "New Mexico".

TYPE DEPOSITORY: MFNB.

SEX OF TYPE: M.

frendei Endroedi, 1963: 328. Mex.: Volcan Colima; TX; Mex., C. Amer.

TYPE DEPOSITORY: ZSBS.

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1966: 203.

hirta LeConte, 1861: 346. CA; CA/ UT CO/ AZ NM TX OK; Mex.

SEX OF TYPE: M.

lurida Bland, 1863: 354. Western TX.

inconspicua Casey, 1915: 133 (*Spilosota*). CA: Needles.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

magister Casey, 1915: 132 (*Spilosota*). Southern CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

nubeculina Casey, 1915: 131 (*Spilosota*). Mex.: Durango City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

pallidissima Casey, 1915: 133 (*Spilosota*). AZ, NM, western TX. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Casey, 1915: 131; Endroedi, 1966: 216.

immaculata Olivier, 1789: 29 (*Melolontha*). "Guadelupe-Amerique meridionale"; MT/ CA/ NE KS IA MO IL IN/ PA VA/ AZ NM TX OK/ AR LA MS AL TN GA SC NC FL; Mex., C. Amer., S. Amer. Olivier indicates that this species is equal to *bacicolor* Voet. Voet's name (1778) seems to have disappeared from the literature. I can find no mention after the original description, therefore *bacicolor* must be considered a *nomen oblitum*. The original type-locality is probably an error.

frontalis Sturm, 1843: 116. "America Boreali". This appears to be an unvalidated *nomen nudum* which has been carried as a synonym of *Cyclocephala immaculata* Olivier. However, both Chevrolat (1844) and Burmeister (1847) have described species under the name *frontalis* which are now included in *Cyclocephala*. *C. frontalis* Sturm does not appear in Endroedi (1966).

pagana Casey, 1915: 148 (*Ochrosidia*). IA: Keokuk.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

protenta Casey, 1915: 144 (*Ochrosidia*). AL, LA. The type-series is represented by both males and females. No lectotype has been selected. The complete type-locality is AL: Huntsville and Mobile, LA: Morgan City and Vowell's Mill.

TYPE DEPOSITORY: USNM.

rufifrons Casey, 1915: 145 (*Ochrosidia*). MO, KS, OK, TX. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

tenuicutis Casey, 1915: 146 (*Ochrosidia*). KS: Douglas Co. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1943: 19, and 1966: 133; Forbes, 1894: 138.

REDESCRIPTION: Casey, 1915: 145; Endroedi, 1966: 219.

HOST: Larvae: soil of pasturelands and lawns. Adults: non-feeders (Ritcher, 1966: 133).

knobelae Brown, 1934: 23 (*Ochrosidia*). AR: Hope; AR.

TYPE DEPOSITORY: CNCI type no. 3528.

SEX OF TYPE: M.

laminata Burmeister, 1847: 57. Brazil; CA/ TX; Mex., C. Amer., S. Amer.

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1966: 229.

longula LeConte, 1863: 79. Cape San Lucas; OR/ CA NV/ UT/ AZ TX; Mex. No lectotype has been selected.

SEX OF TYPE: M.

abrupta Casey, 1915: 152 (*Ochrosidia*). CA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

ambiens Casey, 1915: 155 (*Ochrosidia*). AZ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

marcida Casey, 1915: 155 (*Ochrosidia*). TX: Austin.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

modulata Casey, 1915: 154 (*Ochrosidia*). AZ: Huachuca Mts. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

obesula Casey, 1915: 156 (*Ochrosidia*). CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

oblongula Casey, 1915: 156 (*Ochrosidia*). CA: San Diego.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

phasma Casey, 1915: 153 (*Ochrosidia*). Southern CA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

prona Casey, 1915: 157 (*Ochrosidia*). AZ: Congress Junction. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

reflexa Casey, 1915: 153 (*Ochrosidia*). OR: Corvallis.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

rugulifrons Casey, 1915: 154 (*Ochrosidia*). AZ: Tucson.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

rustica Casey, 1915: 157 (*Ochrosidia*) (preoccupied Olivier, 1789: 27). CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

californica Arrow, 1937: 9 (replacement name for *rustica* Casey). CA. Endroedi (1966: 240) states that this is an unjustified replacement name. This does not seem correct, as *rustica* appears to be a straightforward case of homonymy.

IMMATURE STAGES: Ritcher, 1944: 17, and 1966: 132 (under name *abrupta* Casey).

REDESCRIPTION: Casey, 1915: 157; Endroedi, 1966: 240.

HOST: Larvae: soil, alfalfa, grain crops.

lunulata Burmeister, 1847: 62. Brazil; AZ NM; Mex., C. Amer., S. Amer. The lectotype was designated by Endroedi (1966: 242).

TYPE DEPOSITORY: M.-Luther Univ., Halle.
SEX OF TYPE: F.

nubeculosa Burmeister, 1847: 63. Caracas.

TYPE DEPOSITORY: M.-Luther Univ., Halle.
SEX OF TYPE: M.

oblita Casey, 1915: 159 (*Ochrosidia*). Honduras: San Pedro Sula.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.
REDESCRIPTION: Endroedi, 1966: 242.

mafaffa Burmeister, 1847: 69. Mex.; AZ/ AR; Mex., C. Amer., S. Amer. The distribution records are questionable. The lectotype was designated by Endroedi (1966).

TYPE DEPOSITORY: M.-Luther Univ., Halle.
SEX OF TYPE: M.

grandis Burmeister, 1847: 69. Guadeloupe.

SEX OF TYPE: M.

cuernavacana Casey, 1915: 117 (*Stigmalia*). Mex.: Cuernavaca, Morelos.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

deceptor Casey, 1915: 118 (*Stigmalia*). Mex.: Guerrero. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

deficiens Casey, 1915: 117 (*Stigmalia*). Mex.: Guerrero. The type-series is represented by both male and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

fallaciosa Casey, 1915: 117 (*Stigmalia*). Mex.: Guerrero.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

histrionica Casey, 1915: 119 (*Stigmalia*) (as a subspecies). "Panama?".

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

REDESCRIPTION: Casey, 1915: 118; Endroedi, 1966: 246.

melanocephala Fabricius, 1775: 36 (*Melolontha*). Brasil; CA/ AZ TX/ AR; Mex., C. Amer., S. Amer., W. Indies.

leucophthalma Fischer von Waldheim, 1823: 265. "Unknown". The original description was unavailable. Sherborn (Index Animalium, 1927) lists *leucophthalma* Fischer von Waldheim with this date and page in the genus *Chalepus*.

dimidiata Burmeister, 1847: 57. Mex.

ventralis Erichson, 1847: 97. Peru.

elegans Horn, 1871: 337. "...Lower California and Indian Territory". The type-series is represented by both males and females.

ocularis Casey, 1915: 162 (*Dichromina*). Panama: Chiriqui. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Endroedi, 1966: 256.

HOST: Adults: Jimson weed flowers, green peaches, leaves of roses, and walnuts. Larvae: roots of grasses, strawberry plants, and young fruit trees.

miamiensis Howden and Endroedi, 1966: 295, figs. 3, 10, 11. FL: Dade Co., Miami; FL.

TYPE DEPOSITORY: CNCI (type no. 9117).
SEX OF TYPE: M.

nigricollis Burmeister, 1847: 54. N. Amer.; TX OK/ AR LA. Neotype by Endroedi, 1966: 266. LA, Franklin; in Endroedi colln.

SEX OF TYPE: MF.

robusta LeConte, 1863: 79. TX.

TYPE DEPOSITORY: MCZC.

subvittata Brown, 1930: 5 (*Ochrosidia*). OK: Choctaw Co.

TYPE DEPOSITORY: CNCI (type no. 3112).

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1966: 265.

obesa Burmeister, 1847: 59. Brit. Guiana: Demerary; AZ; C. Amer., S. Amer., W. Indies. This species is included on basis of a specimen so labeled in MFNB. U.S. record would seem to need verification.

TYPE DEPOSITORY: M.-Luther Univ., Halle.

SEX OF TYPE: F.

pasadenae Casey, 1915: 148 (*Ochrosidia*). Southern CA; CA/ CO/ NE KS IN/ PA VA/ AZ NM TX/ SC FL; Mex. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

arizonica Casey, 1915: 149 (*Ochrosidia*). AZ. Complete type-locality citation is as follows: "Southern Arizona (in the Sta. Rita and Huachucha Mts., Douglas and at other places)". The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

facilis Casey, 1915: 150 (*Ochrosidia*). NM: Jemez Springs and Albuquerque.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

melina Casey, 1915: 149 (*Ochrosidia*). NM and TX. Type-locality: "Valley of the Rio Grande, from Jemez Springs, and Albuquerque, New Mexico, to the Great Bend, Texas." The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

ovulata Casey, 1915: 151 (*Ochrosidia*). AZ: Sta. Rita Mts. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

pusilla Casey, 1915: 150 (*Ochrosidia*) (as subspecies). TX: El Paso.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

validiceps Casey, 1915: 148 (*Ochrosidia*). Southern AZ. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1944: 20, and 1966: 133.

REDESCRIPTION: Endroedi, 1966: 280.

HOST: Larvae: privet roots.

pilosicollis Saylor, 1936: 2 (*Spilosota*). CA; CA. The author reports specimens "All are from California Sherman Id., Sacramento, Davis, Pasadena and Calif.".

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Endroedi, 1966: 285.

puberula LeConte, 1863: 80. GA; AL GA FL.

TYPE DEPOSITORY: MCZC.

REDESCRIPTION: Casey, 1915: 147; Endroedi, 1966: 287.

seditiosa LeConte, 1863: 79. MS: Ship Isl.; CA/ VA/ AZ/ MS AL GA. California distribution record is questionable.

TYPE DEPOSITORY: MCZC.

setidiosa (error). (in Saylor, 1945: 382).

REDESCRIPTION: Casey, 1915: 158; Endroedi, 1966: 304.

testacea Burmeister, 1847: 57. Guyana: Cayenne; TX; Mex., C. Amer., S. Amer.

SEX OF TYPE: M.

ovulum Bates, 1888: 306, pl. XVIII, fig. 3. Guatemala, Nicaragua, Panama, S. Amer. The type-series is represented by both males and females from various localities in the above countries. No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

REDESCRIPTION: Endroedi, 1966: 318.

wandae Hardy, 1974b: 160. CA: Imp. Co., 3 mi. NW. of Glamis; CA.

TYPE DEPOSITORY: CASC.

SEX OF TYPE: M.

Genus ASPIDOLEA Bates, H. W.

Aspidolea Bates, H. W, 1888: 296. Type-species: *Aspidolea singularis* Bates (monot).

Paraspidolea Hoehne, 1922a: 90. Type-species: *Paraspidolea suturalis* Hoehne (orig. des).

KEYS: Endroedi, 1966: 340.

kuntzeni Hoehne, 1922a: 87. Mex.: Venezuela, Colombia; NM; C. Amer., S. Amer. Record included is based on a specimen in the BMNH. U.S. distribution would seem to need verification.

pygidialis Hoehne, 1922a: 89. Panama.

SEX OF TYPE: F.

REDESCRIPTION: Endroedi, 1966: 351.

singularis Bates, 1888: 296, pl. XVII, fig. 11. Guatemala; Nicaragua; Panama; TX; Mex., C. Amer., S. Amer. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

similis Hoehne, 1922a: 82. Colombia, Ecuador.

TYPE DEPOSITORY: MFNB.

texana Hoehne, 1922a: 84. TX: San Antonio.

TYPE DEPOSITORY: MFNB.

SEX OF TYPE: F.

REDESCRIPTION: Endroedi, 1966: 356.

Genus ANCOCNATHA Erichson

Ancognatha Erichson, 1847: 97. Type-species: *Ancognatha scarabaeoides* Erichson (design. by Casey, 1915: 111).

Barotheus Bates, H. W, 1891: 30. Type-species: *Barotheus andinus* Bates (monot) = *castanea* (Erichson).

Pseudancognatha Otoya, 1945: 275 (as subgenus). Type-species: *Ancognatha nigriventris* Otoya (orig. des).

KEYS: Endroedi, 1966: 368.

manca LeConte, 1866b: 382 (*Cyclocephala*). AZ; AZ NM; Mex.

TYPE DEPOSITORY: MCZC.

SEX OF TYPE: M.

aequata Bates, 1888: 297. "Mexico: Ciudad in Durango". No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

SEX OF TYPE: M.

laevigata Bates, 1888: 297. Mex: Tenancingo. No lectotype has been selected.

TYPE DEPOSITORY: BMNH.

durangoana Casey, 1915: 125. Mex: Durango City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

perspicua Casey, 1915: 126. AZ: Prescott.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

zuniella Casey, 1915: 127. NM.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1966: 134.

REDESCRIPTION: Casey, 1915: 126; Endroedi, 1966: 376.

Genus DYSCINETUS Harold

Dyscinetus Harold, 1869: 123 (replacement name for *Chalepus* MacLeay). Type-species: *Melolontha geminatus* Fabricius (automat) = *dubius* (Olivier). This is the accepted replacement name and is widely used. Neave (1939) cites an earlier proposal for a replacement name, *Cyclocephalus* Berthold, 1827. This seems to have generally been overlooked or ignored.

Chalepus MacLeay, 1819: 149. Type-species: *Melolontha geminatus* Fabricius (monot).

Palechus Casey, 1915: 174 (as subgenus). Type-species: *Palechus histrio* Casey (orig. des) = *laevipunctatus* (Bates).

KEYS: Casey, 1915: 166 (part); Endroedi, 1966: 385; Saylor, 1945: 380.

morator Fabricius, 1798: 24 (*Scarabaeus*). "India orientali". The lectotype was designated by Endroedi (1966).

TYPE DEPOSITORY: UZMC (Fabricius Colln.).

SEX OF TYPE: M.

trachypygus Burmeister, 1847: 79 (*Chalepus*). SC, Mex. The lectotype was designated by Endroedi (1966).

TYPE DEPOSITORY: M.-Luther Univ., Halle.

SEX OF TYPE: M.

bitumorosus Casey, 1915: 171. Guatemala: Toyahaj.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

borealis Casey, 1915: 171. NY.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

discedens Casey, 1915: 171 (as subspecies of *trachypygus* Burmeister). PA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1944: 21 (under name *trachypygus*), and 1966: 134.

REDESCRIPTION: Endroedi, 1966: 393.

HOST: Larvae: feed beneath sod, in compost heaps, near pigpens.

COMMON NAME: Rice beetle.

picipes Burmeister, 1847: 79 (*Chalepus*). Puerto Rico; KS/ AZ; Mex., W. Indies. The type-series is represented by both males and females. No lectotype has been selected.

obsoletus LeConte, 1854b: 222 (*Chalepus*). "San Diego Trip".

geminatus Jacquelin du Val, 1856: 127 (*Chalepus*) (in Jacquelin du Val, 1856:127).

punctipes Bates, 1888: 312 (*Unknown*) (nomen dubium). Unknown. This name may be the result of a lapsus on the part of Saylor (1945) derived from *puncticauda* Casey, and *picipes* Burm. Endroedi (1966) cites as synonym of *picipes* Burm. and refers to Bates (1888), cites an earlier reference (Saylor 1945), and states the type is in BMNH. Arrow (1937) does not list a *punctipes* by any author and no *punctipes* is included by Bates (1988).

puncticauda Casey, 1909: 282. KS: Hamilton Co. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

ebeninus Casey, 1915: 169. Mex.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

gilanus Casey, 1915: 168 (as subspecies). AZ: Tucson.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

laevissimus Casey, 1915: 167. Mex.: Durango City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

obsidianus Casey, 1915: 168. Brazil; Rio Grande do Sul.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

subquadratus Casey, 1915: 166. Mex.: near the City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

REDESCRIPTION: Endroedi, 1966: 395.

Genus STENOCRATES Burmeister

Stenocrates Burmeister, 1847: 83. Type-species: *Geotrupes laborator* Fabricius (design. by Casey, 1915: 114). Designator of type-species needs verification. Casey appears to be designator but there may be an earlier designation.

KEYS: Endroedi, 1966: 415.

celatus Prell, 1937: 10. "Brasilien"; AZ; Mex., S. Amer. This species is included based on a specimen label.

REDESCRIPTION: Endroedi, 1966: 423.

Genus COSCINOCEPHALUS Prell

Coscinocephalus Prell, 1936: 145 (replacement name for *Anoplocephalus* Schaeffer). Type-species: *Anoplocephalus cibrifrons* Schaeffer (automat).

Anoplocephalus Schaeffer, 1906b: 259. Type-species: *Anoplocephalus cibrifrons* Schaeffer (monot).

TAXONOMY: Endroedi, 1966: 437.

cibrifrons Schaeffer, 1906b: 260 (*Anoplocephalus*). AZ: Huachuca Mts.; AZ. The type-series is represented by both males and females.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Casey, 1915: 123; Endroedi, 1966: 437.

ECOLOGY: Leech, 1955: 6.

Tribe PENTODONTINI

Pentodontidae Burmeister, 1847; Bothynidae Burmeister, 1847; Podalgidae Burmeister, 1847; Pentodontides Lacordaire, 1856; Pimelopides Lacordaire, 1856; Pentodontinae Bates, H. W., 1888; Pentodontini Casey, 1915.

Revision: Casey, 1915 (N. Amer.); Saylor, 1946b (in part; N. Amer.); Endroedi, 1969 (New World). Keys: Casey, 1915: 178; Saylor, 1948b: 242 (includes Oryctini and Pentodontini as treated here); Endroedi, 1969: 4 (New World).

Genus EUETHEOLA Bates

Euetheola Bates, 1888: 314. Type-species: *Heteronychus humilis* Burmeister (monot).

KEYS: Endroedi, 1969: 13.

humilis humilis Burmeister, 1847: 93 (*Heteronychus*). Colombia, Guyana, Brazil; AZ; Mex., C. Amer., S. Amer. The lectotype was designated by Endroedi, 1969: 16.

SEX OF TYPE: F.

hondurana Casey, 1915: 188. Honduras: San Pedro Sula.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

parvus Casey, 1915: 172 (*Dyscinetus*). Brazil: Rio Grande do Sula.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

REDESCRIPTION: Endroedi, 1969: 14.

humilis rugiceps LeConte, 1856: 21 (*Ligyrus*). GA; AL GA SC.

IMMATURE STAGES: Ritcher, 1944: 24 and 1966: 136.

REDESCRIPTION: Casey, 1915: 187; Endroedi, 1969: 14.

ECOLOGY: Comstock, 1880: 246; Riley, 1886: 32; Howard, 1888: 11; Titus, 1905: 7; Baerg and Palm, 1932: 207.

HOST: Larvae: decayed vegetable matter in soil. Adults: sugarcane, corn.

subglabra Schaeffer, 1909: 383 (*Ligyrus*). AZ: Nogales; AZ; Mex.

REDESCRIPTION: Casey, 1915: 188; Endroedi, 1969: 14.

Genus LIGYRUS Burmeister

Ligyrus Burmeister, 1847: 542. Type-species: *Scarabaeus gibbosus* De Geer (design. by Casey, 1915: 178). Casey appears to be designator, however there may be an earlier designation. The subgenera *Ligytus* (*Euligyrus*) and *Ligyrus* (*Grylius*) are extralimital.

Ligyrus (error) . (in Rivers, 1891: 97).

Anagrylius Casey, 1915: 204 (as subgenus). Type-species: *Heteronychus tumulosus* Burmeister (monot) = *cuniculus* (Fabricius).

Ligyrellus Casey, 1915: 206. Type-species: Not yet designated.

Bothynus (of authors, not North American) . Cartwright (1959) and Prell (1937) treated *Ligyrus* as a synonym of *Bothynus*, the result of confusion surrounding type-species identity. Endroedi (1969) later provided an explanation for the confusion, and restored *Ligyrus* and *Bothynus* is now restricted to a group of Central and South American distribution.

KEYS: Cartwright, 1959; Saylor, 1946b; Endroedi, 1969.

Subgenus LIGYRUS Burmeister

cuniculus Fabricius, 1801a: 20 (*Geotrupes*). "America"; FL; W. Indies.

antillarum Palisot de Beauvois, 1811: 104 (*Scarabaeus*). "Les Antilles".

tumulosus Burmeister, 1847: 101 (*Heteronychus*). "Carolina". The lectotype was designated by Endroedi, 1969: 56.

REDESCRIPTION: Cartwright, 1959: 535; Endroedi, 1969: 55.

gibbosus gibbosus De Geer, 1774: 322 (*Scarabaeus*). PA; ID/ AB SD/ MN WI MI/ WY/ NE KS IA MO IL IN OH KY/ NY PA NJ DE MD DC VA/ MA RI CT/ AZ NM TX OK/ AR LA MS AL TN GA SC NC FL; W. Indies.

juvencus Fabricius, 1775: 18 (*Scarabaeus*). "America".

morio LeConte, 1847: 87 (*Bothynus*). "Provinciis mediis". This species is cited in original description as perhaps the *Scarabaeus gregarius* Dejean, an unvalidated nomen nudum.

variolosus Burmeister, 1847: 121 (*Podalgus*). North America. The lectotype was designated by Endroedi, 1969: 62.

SEX OF TYPE: M.

bicorniculatus Casey, 1915: 198. KS.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

breviusculus Casey, 1915: 196. NJ. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

curtipennis Casey, 1915: 199. NM.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

farctus Casey, 1915: 200. Northern Mex.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

lacustris Casey, 1915: 196 (as subspecies). IL: Northern Highland Park.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

laetulus Casey, 1915: 197. TX: Austin, IA: Cherokee, IN. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

laticauda Casey, 1915: 197. "Northern Atlantic Region".

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

longulus Casey, 1915: 193. NY: Willets Point, Long Island.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

lucublandus Casey, 1915: 199 (as subspecies). CO: Denver. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

parallelus Casey, 1915: 194. TX: Waco. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

puncticauda Casey, 1915: 195 (as subspecies). MS: Vicksburg.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

remotus Casey, 1915: 194. NJ: Atlantic City. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

rubidus Casey, 1915: 198. CO: Boulder Co.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

texanus Casey, 1915: 195. TX: Dallas and Lee Co. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

virginicus Casey, 1915: 193. VA: Ft. Monroe.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1944: 25, and 1966: 136.

REDESCRIPTION: Casey, 1915: 195; Cartwright, 1959: 522; Endroedi, 1969: 59.

ECOLOGY: Comstock, 1881: 274; Hayes, 1917: 253.

HOST: Larvae: roots of grasses, barley, corn, oats, wheat, and other cereals, pigweed, wild sunflower.

Adults: beets, carrots, celery, corn, cotton, dahlias, elm, oak, parsnip, potatoes, ragweed, wild and cultivated sunflower (Comstock, 1880; Essig, 1926).

COMMON NAME: Muck or carrot beetle (Essig, 1926: 446).

gibbosus obsoletus LeConte, 1847: 87 (*Bothynus*). "Long Peak"; WA OR/ CA NV/ UT CO/ AZ NM TX; Mex.

TYPE DEPOSITORY: MCZC.

californicus Casey, 1909: 283. Southern CA. No lectotype has been selected.

spissipes Casey, 1909: 283. NM. No lectotype has been selected.

arizonensis Casey, 1915: 201. AZ: Probably southern.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

brevipes Casey, 1915: 202. TX: near El Paso.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

effetus Casey, 1915: 200. NM: Jemez and Gallina Springs. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

laevicauda Casey, 1915: 202. NM: Santa Fe.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

laticollis Casey, 1915: 203 (as subspecies). Southern CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

scitulus Casey, 1915: 203. Southern CA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

REDESCRIPTION: Casey, 1915: 200; Cartwright, 1959: 525; Endroedi, 1969: 61.

neglectus LeConte, 1847: 87 (*Bothynus*). "...provinciis australibus...prov. medis inventus"; LA MS AL GA SC NC FL. This species is cited as possibly same as *Scarabaeus juvencus* Dejean.

TYPE DEPOSITORY: MCZC.

juvencus LeConte, 1856: 20. GA, SC. This name is an apparently uncorrected jr. homonym with Fabricius 1775: 18.

TYPE DEPOSITORY: MCZC.

REDESCRIPTION: Casey, 1915: 197; Cartwright, 1959: 528; Endroedi, 1969: 62.

Subgenus LIGYRODES Casey

Ligyrodes Casey, 1915: 179. Type-species: *Scarabaeus relicta* Say (orig. des).

relictus Say, 1825: 194 (*Scarabaeus*). MA: Milton, PA; MB MT ND SD/ MN WI MI ON PQ/ NB/ WY UT CO/ NE KS IA MO IL IN OH/ NY PA NJ DE MD DC VA/ ME NH MA RI CT/ AZ OK/ AR NC.

clypealis Casey, 1915: 181 (*Ligyrodes*). NJ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

parviceps Casey, 1915: 182 (*Ligyrodes*). IA: Keokuk.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

quadripennis Casey, 1915: 182 (*Ligyrodes*). TX, LA, IL. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

vernicicollis Casey, 1915: 183 (*Ligyrodes*) (as subspecies). IA: Keokuk.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

dawsoni Casey, 1924: 334 (*Ligyrodes*). NB: Sioux City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1944: 22, and 1966: 135.

REDESCRIPTION: Casey, 1915: 182; Endroedi, 1969: 49.

ECOLOGY: Hayes, 1925: 106.

HOST: Larvae: moist, rich soil, organic matter.

COMMON NAME: Manure worm or muck worm (Ritcher, 1966: 135).

sallaei Bates, 1888: 318. Mex.: Almolonga (lectotype); TX; Mex., C. Amer. The lectotype was designated by Cartwright, 1959: 518.

TYPE DEPOSITORY: BMNH.

SEX OF TYPE: M.

aztecus Casey, 1915: 184 (*Ligyrodes*). Mex.: Cuernavaca, Morelos.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

propinquus Casey, 1915: 183 (*Ligyrodes*). Mex.: San Angel, near the city. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Casey, 1915: 183; Endroedi, 1969: 50.

Subgenus OXYGRYLIUS Casey

Oxygrylius Casey, 1915: 208. Type-species: *Ligyrus ruginasus* LeConte (orig. des).

TAXONOMY: Hardy, 1964.

peninsularis Casey, 1915: 209 (*Oxygrylius*). CA: Lower San Jose del Cabo; CA; Mex.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 209; Hardy, 1964: 126.

ruginasus LeConte, 1856: 20. TX: "Ringgold Barracks" (near Rio Grande City); CA/ AZ NM TX; Mex. Ritcher (1944:?) cites immatures of this species from Mississippi, outside the

known adult range. This may be larvae of some other species (see Hardy, 1964: 123).

TYPE DEPOSITORY: MCZC.

pimalis Casey, 1915: 209 (*Oxygrylius*). Southern AZ. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Casey, 1915: 208; Hardy, 1964: 123; Endroedi, 1969: 97.

HOST: Adults: roots of lettuce.

Subgenus TOMARUS Erichson

Tomarus Erichson, 1847: 95. Type-species: *Tomarus maimon* Erichson (monot).

laevicollis Bates, 1888: 316. Mex.: "Acapulco, Guerrero"; AZ; Mex. The lectotype was designated by Cartwright 1959: 518. The distribution record is based upon a specimen with state label only and probably needs verification.

TYPE DEPOSITORY: BMNH.

SEX OF TYPE: M.

bryanti Rivers, 1891: 97. CA: Lower San Jose del Cabo.

REDESCRIPTION: Casey, 1915: 190; Cartwright, 1959: 536; Endroedi, 1969: 190.

selanderi Cartwright, 1959: 537 (*Bothynus*). Mex.: Los Mochis, Sinaloa; AZ; Mex. This species is included on the basis of a single specimen with data "Phoenix Arizona". It probably needs additional verification for a U.S. record.

subtropicus Blatchley, 1922: 30. FL: Dunedin; AL GA SC NC FL.

SEX OF TYPE: F.

blatchleyi Cartwright, 1944: 34. FL: Miami.

SEX OF TYPE: M.

REDESCRIPTION: Cartwright, 1959: 539; Endroedi, 1969: 66.

Genus APHONIDES Rivers

Aphonides Rivers, 1889b: 6 (replacement name for *Anoplognatho* Rivers, 1887). Type-species: *Anoplognatho dunnianus* Rivers (automat).

Anoplognatho Rivers, 1889a: 101. Type-species: *Anoplognatho dunnianus* Rivers (monot).

Rivers simply states that his name is preoccupied and proposes a replacement, *Aphonides*. Neave (Nomenclator Zoologicus, 1939) seems to indicate doubt concerning the invalidity. Possibly Rivers proposed a replacement based upon homonymy with *Anoplognathus* Leach 1819, which would be incorrect. This problem needs study and clarification.

dunnianus Rivers, 1889a: 102 (*Anoplognatho*). TX: El Paso; AZ TX. The type-series is represented by both males and females. No lectotype has been selected.

REDESCRIPTION: Casey, 1915: 230; 1969: 78.

Genus ORIZABUS Fairmaire

Orizabus Fairmaire, 1878: 260. Type-species: Not yet designated.

Aztecalius Casey, 1915: 228 (as subgenus). Type-species: *Orizabus isodonoides* Fairmaire (orig. des).

Pseudaphonus Casey, 1915: 210. Type-species: *Bothynus pyriformis* LeConte (orig. des). *Cheiroplatys* (of authors, not North American).

KEYS: Casey, 1915: 223; Saylor, 1946b: 17; Endroedi, 1969: 80.

brevicollis Prell, 1914: 204. "Mexiko, Kalifornien"; CA; Mex. Endroedi (1969: 91) lists the lectotype from California; other specimens however would seem to indicate a distribution of Central Mexico. The California record should be considered questionable.

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1969: 90.

clunalis LeConte, 1856: 23 (*Aphonus*). "probably in the valley of the Gila"; AZ TX; Mex.

cultripes Fairmaire, 1878: 261. Mex.: Orizaba.

marginatus Fairmaire, 1878: 262. Mex.

sallei Fairmaire, 1878: 262. Mex.: Jalapa. The type-series is represented by both males and females. No lectotype has been selected.

ligyrides Horn, 1885: 125. AZ.

snowi Horn, 1885: 124. NM.

verticalis Fall, 1905: 272 (*Cheiropatys*). NM: Las Vegas.

SEX OF TYPE: F.

fontinalis Casey, 1915: 226. NM: Jemez Springs. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

parvitarsis Casey, 1915: 227. Mex.: Chihuahua, Sierra Madre Mts.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

ponderosus Casey, 1915: 225. NM: Albuquerque, TX: El Paso. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

REDESCRIPTION: Casey, 1915: 226; Endroedi, 1969: 85.

ECOLOGY: Young, 1969: 927.

isodonoides Fairmaire, 1878: 263 (not North American). Mex.: Toluca; Mex. Saylor (1946a: 18) reports a female from Colorado. It is probably not this species.

pyriformis LeConte, 1847: 88 (*Bothynus*). "furcationem fluminis platte: habitat ... Oregon"; CO; Mex.

debiliceps Casey, 1915: 211 (*Pseudaphonus*). CO.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

lucidus Casey, 1915: 213 (*Pseudaphonus*). CO: Ft. Collins, NM: Ft. Wingate. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

ovalis Casey, 1915: 212 (*Pseudaphonus*). NM: Ft. Wingate.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

repens Casey, 1915: 212 (*Pseudaphonus*). NM: Santa Fe.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

puncticollis Casey, 1924: 335 (*Pseudaphonus*). CO: Denver.

IMMATURE STAGES: Ritcher, 1944: 28, and 1966: 138.

REDESCRIPTION: Casey, 1915: 211; Endroedi, 1969: 89.

Genus APHONUS LeConte

Aphonus LeConte, 1856: 21. Type-species: *Scarabaeus tridentatus* Say (design. by Casey, 1915: 178).

TAXONOMY: Endroedi, 1969: 91; Gill and Howden, 1985: 119.

REDESCRIPTION: Horn, 1882: 122 (mouthparts).

KEYS: Casey, 1915: 214; Endroedi, 1969: 92.

brevicruris Cartwright, 1944: 36. TX: Austwell; TX.

SEX OF TYPE: M.

REDESCRIPTION: Endroedi, 1969: 93; Gill and Howden, 1985: 122.

castaneus Melsheimer, 1845: 138 (*Bothynus*). MD; NY PA NJ DE MD DC VA/ ME MA RI/ AL TN GA SC NC FL.

obesus Burmeister, 1847: 119 (*Podalgus*). NY. The lectotype was designated by Endroedi, 1969: 93.

SEX OF TYPE: M.

cubiformis Casey, 1915: 221. "near Brooklyn, Long Island". No lectotype has been selected.

SEX OF TYPE: F.

saginatus Casey, 1915: 220. AL: Mobile. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

trapezicollis Casey, 1915: 219. NC: Southern Pines. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1944: 30, and 1966: 138.

REDESCRIPTION: Casey, 1915: 220; Endroedi, 1969: 92; Gill and Howden, 1985: 122.

HOST: Larvae: turf, sandy soil.

densicauda Casey, 1915: 216. PA; OH KY/ PA/ MS TN GA.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Ritcher, 1944: 31, and 1966: 139.

REDESCRIPTION: Endroedi, 1969: 95; Gill and Howden, 1985: 125.

HOST: Larvae: pasture land, in or just beneath sod. Adults: "In soil throughout year" (Ritcher, 1966: 139).

texanus Gill and Howden, 1985: 125. TX: Gillespie Co., Fredricksburg; TX OK.

TYPE DEPOSITORY: Howden Coll.

SEX OF TYPE: M.

tridentatus Say, 1823: 209 (*Scarabaeus*). AR; MN WI MI ON PQ/ IL IN OH/ NY PA NJ/ ME NH MA CT/ AR TN GA SC NC.

frater LeConte, 1856: 22. NJ.

aterrimus Casey, 1915: 216. ME: Paris, NH. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

congestus Casey, 1915: 218. IL, MI.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

elongatus Casey, 1915: 215. ME: Monmouth. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

modulatus Casey, 1915: 219. IN.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

politus Casey, 1915: 218. NY.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

scutellaris Casey, 1924: 335. WI: Bayfield.

IMMATURE STAGES: Ritcher, 1944: 31, and 1966: 139.

REDESCRIPTION: Casey, 1915: 214; Endroedi, 1969: 94; Gill and Howden, 1985: 126.

HOST: Larvae: woodland loam.

variolosus LeConte, 1847: 88 (*Bothynus*). GA; GA SC FL. LeConte's (1847) description provides a possible validation of a Dejean *nomen nudum*.

hydropicus LeConte, 1856: 22. GA.

ingens Casey, 1924: 334. "southern Atlantic (?)".

REDESCRIPTION: Casey, 1915: 216; Endroedi, 1969: 96; Gill and Howden, 1985: 128.

Tribe ORYCTINI

Oryctesiens Mulsant, 1842; *Xylotrupidae* Hope, 1845; *Strategidae* Burmeister, 1847; *Oryctidae* Burmeister, 1847; *Oryctides* Lacordaire, 1856; *Oryctini* LeConte and Horn, 1883.

Revision: Casey, 1915 (N. Amer.); Saylor, 1946a (N. Amer.); Endroedi, 1976a (the Americas). Keys: Casey, 1915: 238; Saylor, 1946a: 16, and 1948b: 242 (includes Pentodontini); Endroedi, 1976a: 10.

Genus XYLORYCTES Hope

Xyloryctes Hope, 1837: 90. Type-species: *Geotrupes satyrus* Fabricius (orig. des) = *jamaicensis* (Drury).

TAXONOMY: Casey, 1915: 252.

KEYS: Casey, 1915: 252; Endroedi, 1976a: 12.

jamaicensis Drury, 1773: 1, pl. xxxiv, figs. 1, 2 (*Scarabaeus*). NY; WI MI/ NE/ AZ NM TX. The description was published in 1770, vol. 1, p. 74, however without a name. Index, published in 1773, validated earlier description. There is a possibility Drury switched names, and actually intended *antaeus* for this species.

satyrus Fabricius, 1775: 12 (*Scarabaeus*). "America septentrionali".

americanus Palisot de Beauvois, 1807: 75, pl. II, fig. 5 (*Scarabaeus*). "Amerique septentrionale". For verification of the dates, of publication see Menke, 1963.

SEX OF TYPE: M.

faunus Casey, 1895: 609. AZ. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

hebes Casey, 1915: 257. NM: Ft. Wingate. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

lacustris Casey, 1915: 255. Region about Lake Michigan and Lake Superior. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

obsolescens Casey, 1915: 256. WI.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

tenuicornutus Casey, 1915: 255 (as subspecies). "probably from Nebraska".

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

IMMATURE STAGES: Weiss, 1921: 193; Ritcher, 1944: 38 (as *satyrus*), and 1966: 142.

ECOLOGY: Hagen, 1884: 239; Hamilton, 1884: 107.

HOST: Larvae: deciduous wood, under leaf mold.

Genus STRATEGUS Kirby

Strategus Kirby, 1828: 349. Type-species: *Scarabaeus aloeus* Linnaeus (design. by Hope, 1837: 87). Hope states the type-species is *aloeus* "Fabricius". I can find no evidence of a Fabrician species by this name. This is evidently intended to refer to *aloeus* Linnaeus as indicated by Casey (1915:238). Ratcliffe & Endroedi both treated *Strategus* in 1976. Ratcliffe's treatment is followed below, as being more detailed, with variations from Endroedi's treatment noted where appropriate.

Anastrategus Casey, 1915: 231. Type-species: *Strategus cessus* LeConte (orig. des).

Strategodes Casey, 1915: 245 (as subgenus). Type-species: *Scarabaeus antaeus* Drury (design. by Ratcliffe, 1976: 98).

Strategopsis Chapin, 1932: 302 (as subgenus). Type-species: *Podalgus sarpedon* Burmeister (orig. des).

TAXONOMY: Kolbe, 1906: 1; Horn, 1875: 143; Casey, 1915: 231; Ratcliffe, 1976; Endroedi, 1976a: 124.

REDESCRIPTION: Ratcliffe, 1976: 98; Endroedi, 1976a: 124.

ECOLOGY: Ratcliffe, 1976.

KEYS: Horn, 1875: 143; Casey, 1915: 240; Ratcliffe, 1976: 98; Endroedi, 1976a: 126.

aloeus Linnaeus, 1758: 345 (*Scarabaeus*). "America septentrionali"; AZ NM TX/ AR LA MS AL FL; Mex., C. Amer., S. Amer. For a more complete species synonymy of taxa described from South and Central America, see Ratcliffe, 1976, or Endroedi, 1976a: 136.

TYPE DEPOSITORY: Uppsala, Sweden.

SEX OF TYPE: M.

julianus Burmeister, 1847: 133. Mex. This name is considered a valid subspecies by Endroedi, 1976a: 138.

TYPE DEPOSITORY: M.-Luther Univ., Halle.

SEX OF TYPE: M.

HOST: Larvae: decaying wood. Adult: Date palms.

arizonicus Schaeffer, 1915: 51 (as variety). AZ: Prescott. The type-series is represented by both males and females. No lectotype has been selected.

gaillardi Casey, 1915: 244. Panama: Culebra.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

roosevelti Casey, 1915: 241. TX.

TYPE DEPOSITORY: USNM [Lectotype].

SEX OF TYPE: M.

tarsalis Casey, 1915: 243. TX.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

IMMATURE STAGES: Ritter, 1944: 35, and 1966: 141 (as *julianus*).

REDESCRIPTION: Casey, 1915: 241; Ratcliffe, 1976: 107; Endroedi, 1976a: 136.

ECOLOGY: Duges, 1886: 27, and 1876: 49 (as *julianus*); Shufeldt, 1884: 338; Cockerell, 1906: 34 (as *julianus*); Nevermann, 1933: 181 (as *julianus*); Ratcliffe, 1976: 109.

HOST: Larvae: decaying wood. Adults: various palm species.

antaeus Drury, 1773: 1, pl. xxxiv, figs. 3, 4 (*Scarabaeus*). NY: Jamaica; KS KY/ NY PA NJ DE MD VA/ MA RI/ TX OK/ AR MS AL TN GA SC NC FL. The description was published in 1770, vol. 1, p. 74, however without a name. Index, published in 1773, validated earlier description. There is a possibility Drury switched names, and actually intended *jamaicensis* for this species.

maimon Fabricius, 1775: 10 (*Scarabaeus*). "America". Type locality was restricted to Eastern United States by Ratcliffe, 1976: 115.

TYPE DEPOSITORY: BMNH.

REDESCRIPTION: Fabricius, 1787: 6.

atrolucens Casey, 1915: 247. FL.

TYPE DEPOSITORY: USNM [Lectotype].

SEX OF TYPE: M.

divergens Casey, 1915: 246. "Gulf States".

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

pinorum Casey, 1915: 248. NC: Southern Pines (Lectotype).

TYPE DEPOSITORY: USNM (Lectotype).

SEX OF TYPE: M.

semistriatus Casey, 1915: 250. TX.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

septentrionis Casey, 1915: 249. NJ.

TYPE DEPOSITORY: USNM (Lectotype).

SEX OF TYPE: M.

sinuatus Casey, 1915: 250. AL.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

houstonensis Knaus, 1925: 182. TX: Houston.

TYPE DEPOSITORY: KSUC.

SEX OF TYPE: M.

IMMATURE STAGES: Ritter, 1944: 34, and 1966: 140.

REDESCRIPTION: Fabricius, 1787: 6; Casey, 1915: 247; Ratcliffe, 1976: 115; Endroedi, 1976a: 133.

ECOLOGY: Ritter, 1966: 141; Manee, 1908: 286; Cockerell, 1906: 34.

HOST: Larvae: surface litter in pine woodland, date palms.

cessus LeConte, 1866b: 382. AZ; AZ NM; Mex.

TYPE DEPOSITORY: MCZC (Lectotype).

SEX OF TYPE: F.

beckeri Kolbe, 1906: 14. Mex.: Sierra Madre de Durango. This name is treated as a valid species by Endroedi, 1976a: 150 (from Mexico).

TYPE DEPOSITORY: MFNB (lectotype).

SEX OF TYPE: M.

cavicauda Casey, 1915: 233 (*Anastrategus*) (as subspecies). "probably from New Mexico".

TYPE DEPOSITORY: USNM (lectotype).

SEX OF TYPE: F.

durangoensis Casey, 1915: 234 (*Anastrategus*). Mex.: Tepehuanes, Durango.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

inflatus Casey, 1915: 234 (*Anastrategus*). "AZ: probably southern".

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

tantalus Casey, 1915: 235 (*Anastrategus*). AZ: Prescott.

TYPE DEPOSITORY: USNM (Lectotype).

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 233; Ratcliffe, 1976: 123; Endroedi, 1976a: 147.

mormon Burmeister, 1847: 130. TX; KS/ TX OK/ AR.

TYPE DEPOSITORY: MNHP (Oberthuer Col.).

SEX OF TYPE: M.

IMMATURE STAGES: Knaus, 1916 (eggs).

REDESCRIPTION: Casey, 1915: 250; Ratcliffe, 1976: 135; Endroedi, 1976a: 145.

ECOLOGY: Knaus, 1924 and 1916.

HOST: Burrows under horse droppings (Knaus 1916); horse droppings (Knaus 1924).

splendens Palisot de Beauvois, 1809: 89, pl. IIb, fig. 2 (*Scarabaeus*). SC; NY/ MS AL GA SC NC FL. For verification of date, see Menke, 1963. The neotype was designated by Endroedi, 1976a: 152.

TYPE DEPOSITORY: Endroedi Colln.

SEX OF TYPE: M.

boscii Palisot de Beauvois, 1809: 89, pl. IIb, fig. 1 (*Scarabaeus*). SC. For verification of date, see Menke 1963.

carolinensis Casey, 1915: 237 (*Anastrategus*). NC: Southern Pines.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

cognatus Casey, 1915: 236 (*Anastrategus*). FL: Kissimmee.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1944: 37, and 1966: 141.

REDESCRIPTION: Casey, 1915: 236; Ratcliffe, 1976: 143; Endroedi, 1976a: 151.

Tribe DYNASTINI

Dynastidae Burmeister, 1847; Dynastides vrais Lacordaire, 1856; Dynastini LeConte and Horn, 1883; Dynastinae Bates, H. W., 1888.

Revision: Casey, 1915 (N. Amer.); Saylor, 1948a (N. Amer.); Endroedi, 1976b and 1977a (world). Keys: Casey, 1915: 258; Saylor, 1948a: 178; Arnett, 1962: 407; Endroedi, 1976b: 218.

Genus DYNastes Kirby

Dynastes Kirby, 1825: 567. Type-species: *Scarabaeus hercules* Linnaeus (orig. des.).

Theogenes Burmeister, 1847: 254. Type-species: *Scarabaeus neptunes* Quensel (monot.).

TAXONOMY: Casey, 1915: 259; Endroedi, 1976b: 254; Dechambre, 1980: 5.

KEYS: Casey, 1915: 259; Endroedi, 1976b: 255; Dechambre, 1980: 5.

granti Horn, 1870: 78. AZ: Ft. Grant; UT/ AZ NM; Mex.

TYPE DEPOSITORY: MCZC.

SEX OF TYPE: M.

REDESCRIPTION: Casey, 1915: 260; Endroedi, 1976b: 263; Dechambre, 1980: 10.

ECOLOGY: Doll, 1885: 120; Smith, 1885: 151; Knowlton, 1953: 49; Menke and Parker, 1988: 161.

HOST: Larvae: rotten wood, sycamore. Adults: mountain ash (Doll, 1885: 120), velvet ash (Menke and

Parker, 1988: 161.

tityus corniger Sternberg, 1909: 26. "Texas, New Orleans"; TX/ LA. The lectotype was designated by Endroedi, 1976b: 262.

TYPE DEPOSITORY: MFNB.

SEX OF TYPE: M.

TAXONOMY: Casey, 1915: 261.

tityus tityus Linnaeus, 1767: 542 (*Scarabaeus*). "America septentrionali"; IN/ NY PA/ TX/ LA MS AL GA SC NC FL.

mariannus Linnaeus, 1767: 549 (*Scarabaeus*). "Carolina".

pennsylvanicus De Geer, 1774: 309 (*Scarabaeus*) (synonymized by Burmeister, 1847: 261). "Pensylvanie".

IMMATURE STAGES: Ritcher, 1944: 39, and 1966: 143.

REDESCRIPTION: Casey, 1915: 259; Endroedi, 1976b: 261; Dechambre, 10.

ECOLOGY: Hamilton, 1886: 112; Smith, 1886: 54; Chittenden, 1902: 28; Manee, 1915: 266; Prokop, 1969: 20.

HOST: Larvae: in decaying wood of wild cherry, black locust, oak, pine, willow, other trees; pupates in decaying wood. Adults: sap of ash, decaying peaches, plums, pears, and apples.

IMMATURE STAGES: Ritcher, 1944: 39, and 1966: 143.

REDESCRIPTION: Casey, 1915: 259; Endroedi, 1976b: 261; Dechambre, 1980: 10.

ECOLOGY: Hamilton, 1886: 112; Smith, 1886: 54; Chittenden, 1902: 28; Manee, 1915: 266; Prokop, 1969: 20.

HOST: Larvae: in decaying wood of wild cherry, black locust, oak, pine, willow, other trees; pupates in decaying wood. Adults: sap of ash, decaying peaches, plums, pears, and apples.

Genus MEGASOMA Kirby

Megasoma Kirby, 1825: 566. Type-species: *Scarabaeus actaeon* Linnaeus (orig. des).

Megalosoma Burmeister, 1847: 273. Type-species: Not yet designated.

Lycophontes Bruch, 1910: 73. Type-species: *Lycophontes joergensei* Bruch (orig. des).

Megasominus Casey, 1915: 261. Type-species: *Megasoma thersites* LeConte (monot).

TAXONOMY: Cartwright, 1963: 25; Hardy, 1972b: 765.

REDESCRIPTION: Endroedi, 1977a: 37.

KEYS: Hardy, 1972b: 766; Cartwright, 1976: 88; Endroedi, 1977a: 38.

punctulatus Cartwright, 1952: 36. AZ: Pima Co., Santa Rita Range Reserve, 4000 ft.; AZ.

TYPE DEPOSITORY: USNM (type no. 61078).

SEX OF TYPE: M.

REDESCRIPTION: Hardy, 1972b: 775; Endroedi, 1977a: 43.

sleeperi Hardy, 1972b: 775. CA: Riverside Co., Joshua Tree Nat. Monument; CA.

TYPE DEPOSITORY: USNM (type no. 71045).

SEX OF TYPE: F.

REDESCRIPTION: Endroedi, 1977a: 46.

vogti Cartwright, 1963: 25. TX: Southwest Hidalgo Co.; TX.

TYPE DEPOSITORY: USNM (type no. 66585).

SEX OF TYPE: F.

REDESCRIPTION: Hardy, 1972b: 771; Endroedi, 1977a: 53.

Tribe PHILEURINI

Phileuridae Burmeister, 1847; Phileurides Lacordaire, 1856; Phileurini LeConte and Horn, 1883; Phileurina Bates, H. W., 1888.

Revision: Casey, 1915 (N. Amer.); Cazier, 1940 (N. Amer.); Saylor, 1948a (N. Amer.); Endroedi, 1977b and 1978 (the Americas). Biological notes: Luederwaldt, 1911 (S. Amer.). Keys: Casey, 1915: 263; Cazier, 1940: 171; Saylor, 1948a: 181; Arnett, 1962: 408; Endroedi, 1977b: 7.

Genus ARCHOPHILEURUS Kolbe

Archophileurus Kolbe, 1910: 334. Type-species: *Phileurus cribrosus* LeConte (design. by Casey, 1915: 264).

Amblyphileurus Kolbe, 1910: 334. Type-species: Not yet designated.

Periphileurus Kolbe, 1910: 335. Type-species: Not yet designated.

Anisophileurus Prell, 1914: 219. Type-species: *Anisophileurus passalooides* Prell (monot).
The validity of this "Generic" name is in question.

TAXONOMY: Kolbe, 1910: 330; Cazier, 1940: 169; Endroedi, 1977b: 20.
KEYS: Cazier, 1940: 171; Endroedi, 1977b: 20.

cribrosus LeConte, 1854a: 80 (*Phileurus*). "Laredo to Ringgold Barracks"; AZ NM TX; Mex.

TYPE DEPOSITORY: MCZC.
SEX OF TYPE: M.

brevis Casey, 1915: 272. Mex.: Coahuila, Saltillo.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

bullatus Casey, 1915: 274. TX.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

longulus Casey, 1915: 273. Mex.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1966: 144 (diagnosis).

REDESCRIPTION: Casey, 1915: 273; Endroedi, 1977b: 30.

Genus HEMIPHILEURUS Kolbe

Hemiphileurus Kolbe, 1910: 336. Type-species: *Phileurus variolosus* Burmeister (design. by Endroedi, 1978: 81).

Epiphileurus Kolbe, 1910: 336. Type-species: Not yet designated.

REDESCRIPTION: Endroedi, 1978: 81.
KEYS: Endroedi, 1978: 81.

illatus LeConte, 1854a: 80 (*Phileurus*). CA: Vallecitas; CA/ AZ; Mex. The original description is based upon fragments of a dead individual.

TYPE DEPOSITORY: MCZC.

vitulus LeConte, 1866a: 80 (*Phileurus*). "Cape San Lucas".

TYPE DEPOSITORY: MCZC.
SEX OF TYPE: M.

phoenicus Casey, 1915: 267 (*Phileurus*). AZ: Phoenix.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.

puncticollis Casey, 1915: 268 (*Phileurus*). Southern AZ.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

IMMATURE STAGES: Ritcher, 1944: 48, and 1966: 144.

REDESCRIPTION: Casey, 1915: 266; Endroedi, 1978: 96.

ECOLOGY: Hardy, 1977: 92.

HOST: Larvae: in wood, *Dasylirion*, *Bumelia languinosa*.

Genus PHILEURUS Latreille

Phileurus Latreille, 1807: 103. Type-species: *Scarabaeus didymus* Linnaeus (design. by Casey, 1915: 263). Casey cites *Scarabaeus didymus* Linnaeus as type-species. The type-species is not indicated in the original description. Actual type-designation may be elsewhere (other than above).

TAXONOMY: Cazier, 1940: 169.
REDESCRIPTION: Endroedi, 1978: 100.
ECOLOGY: Ohaus, 1900b: 215.
KEYS: Cazier, 1940: 171; Endroedi, 1978: 101.

truncatus Palisot de Beauvois, 1806: 41, pl. Ib, fig. 4 (*Scarabaeus*). VA; VA/ AZ TX/ AL TN FL; Mex., C. Amer. For verification of date, see Menke, 1963.

recurvatus Casey, 1915: 266. Mex.

TYPE DEPOSITORY: USNM.
REDESCRIPTION: Casey, 1915: 265; Endroedi, 1978: 104.

valgus Linnaeus, 1758: 347 (*Scarabaeus*). "America"; KY/ TX/ AL TN NC FL; Mex., C. Amer.

Authorship of *valgus* is attributed to Olivier, 1789: 43 by Endroedi, 1978: 111.

There still seems to be some doubt about the identity of Linnaeus' type (see Landin, 1956: 7). Endroedi recognizes 3 subspecies of *valgus*. The North American form is *valgus valgus*. The synonyms below are those of the nominate subspecies.

castaneus Haldeman, 1843: 304. AL.

capra Bates, 1888: 341 (as a variety of *valgus*). Guatemala.

septentrionis Kolbe, 1910: 352 (*Epiphileurus*) (as subspecies of *Epiphileurus beckeri*). TX, KS, NM, AL, Cuba.

carolinae Casey, 1915: 269 (as subspecies). NC: Southern Pines.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

floridanus Casey, 1915: 270. FL.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

sulcifer Casey, 1915: 269. LA to FL. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

texensis Casey, 1915: 268. TX and LA. The type-series is represented by both males and females. No lectotype has been selected.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Ritcher, 1944: 42, and 1966: 144 (as *castaneus*).

REDESCRIPTION: Endroedi, 1978: 111.

HOST: Larvae: wood, dead basswood.

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Names are indexed as follows:

CAPITALS: All names for taxa above the generic level;

Boldface: Valid generic and subgeneric names;

Roman: Valid specific and subspecific names;

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<i>hardyorum</i> Potts, Anomala	5	<i>manca</i> LeConte, Ancognatha	20
<i>hebes</i> Casey, Xyloryctes	29	<i>marcida</i> Casey, Cyclocephala	17
<i>Hemiphileurus</i> Kolbe	33	<i>marginata</i> Fabricius, Anomala	6
<i>Hemispilota</i> Casey	2	<i>marginatus</i> Fairmaire, Orizabus	27
<i>hirta</i> LeConte, Cyclocephala	16	<i>marginella</i> LeConte, Anomala	3
<i>histrionica</i> Casey, Cyclocephala	18	<i>marijanus</i> Linnaeus, Dynastes	32
<i>Homochromina</i> Casey	15	<i>maritima</i> Casey, Anomala	6
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<i>houstenensis</i> Knaus, Strategus	30	<i>Megalosoma</i> -Burmeister	32
<i>hudsonica</i> Casey, Pelidnota	13	<i>Megasoma</i> Kirby	32
<i>humilis</i> humilis Burmeister, Euetheola	22	<i>Megasominus</i> Casey	32
<i>humilis rugiceps</i> LeConte, Euetheola	22	<i>melanocephala</i> Fabricius, Cyclocephala	18
<i>hydropicus</i> LeConte, Aphonus	28	<i>melina</i> Casey, Cyclocephala	19
<i>illatus</i> LeConte, Hemiphileurus	33	<i>mendica</i> Casey, Anomala	6
<i>immaculata</i> Olivier, Cyclocephala	16	<i>miamiensis</i> Howden and Endroedi, Cyclocephala	18
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<i>incolumis</i> Casey, Anomala	6	<i>minuta</i> Burmeister, Anomala	6
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<i>inconstans</i> (in Schaeffer, 1907: 69)	6	<i>modulata</i> Casey, Anomala	4
<i>inflatus</i> Casey, Strategus	31	<i>modulata</i> Casey, Cyclocephala	17
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<i>morator</i> Fabricius, Dyscinetus	21	<i>pinorum</i> Casey, Strategus	30
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